The Official Guide to Saving the World Third Time Lucky

Nir Strulovitz

Dedicated with love to Ditit.

A mathematician is a person who can find analogies between theorems; a better mathematician is one who can see analogies between proofs and the best mathematician can notice analogies between theories. One can imagine that the ultimate mathematician is one who can see analogies between analogies.

– Stefan Banach

I don't like honors. ... I've already got the prize: the prize is the pleasure of finding the thing out, the kick in the discovery, the observation that other people use it. Those are the real things.

– Richard Feynman

On the eve of his discovery, story has it that Maxwell had a date with a young woman he was later to marry. While walking in a garden, his date remarked about the beauty and wonder of the stars. Maxwell asked how she would feel to know that she was walking with the only person in the world who knew what starlight really was. And it was true. At that time, James Clerk Maxwell was the only person in the world who knew that light of any kind is energy carried in waves of electric and magnetic fields that continuously regenerate each other.

– Paul G. Hewitt, Conceptual Physics

From the back cover:

This is the 3rd and final book in my inventions' books trilogy (BTW my "fiction" book "Destiny In Time" actually belongs here too, so it's really a tetralogy!). Usually in this stage I try to lure you in to read the book. So what's in it for you the reader? What's in it for me? Like Richard Feynman, I'm not doing this for honors or prizes. But unlike him, I don't have anyone appreciating it, let alone putting it to good use.

So the only real thing left is the "high" (like from drugs, but natural) from intellectual thrill of understanding a new truth and feeling special because I'm the first one to understand it.

And as for you my hypothetical reader, if I'm like James Clerk Maxwell then you're like Katherine Clerk Maxwell. You're among the first to know a secret of the Universe, you're a member of a very exclusive club who hold the key to the future, and maybe you're even the next Einstein (Einstein said he didn't stand on the shoulders of Newton, but on the shoulders of Maxwell)!

My last free-thinking free-giving inventions, but is humanity ready to accept my gifts? (pun intended)

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Preface

Why do people despise my inventions so much?

A hint can be found in the book Parkinson's Law by C. Northcote Parkinson.

In the chapter titled: “High Finance or The Point of Vanishing Interest”

[Item: Atomic Reactor ; Cost £10,000,000 ; discussion 2½ minutes]

…It is necessary to pause at this point and consider what views the members are likely to have. Let us suppose that they number eleven, including the Chairman but excluding the Secretary. Of these eleven members, four - including the Chairman - do not know what a reactor is. Of the remainder, three do not know what it is for. Of those who know its purpose, only two have the least idea of what it should cost...

[Item: Bicycle Shed ; Cost £350 ; discussion 45 minutes]

…The debate is fairly launched. A sum of £350 is well within everybody's comprehension. Everyone can visualize a bicycle shed. Discussion goes on, therefore, for forty-five minutes, with the possible result of saving some £50. Members at length sit back with a feeling of achievement…

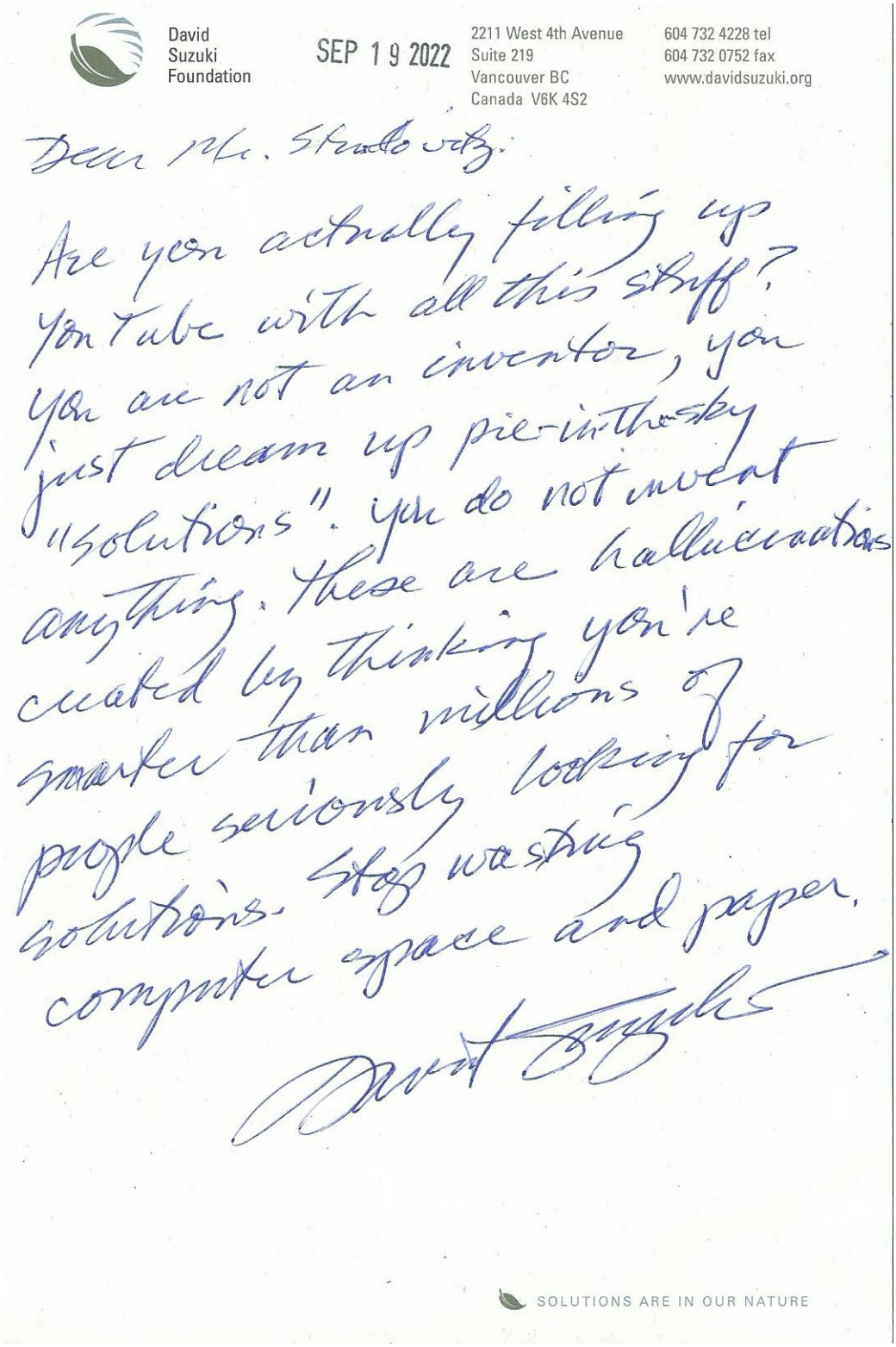
[Item: Refreshments ; Cost £21 ; discussion time 1¼ hours]

…Now begins an even more acrimonious debate. There may be members of the committee who might fail to distinguish between asbestos and galvanized iron, but every man there knows about coffee - what it is, how it should be made, where it should be bought - and whether indeed it should be bought at all…

So we see the real reason is their EGO. Basically, that people are both selfish and stupid. Selfish means they care only about their own good. Stupid means they don’t even understand their own good. Especially in longer term and wider context.

They only care about their status in their immediate environment. Can my invention improve their status in their peer group here and now? NO! So who cares if it saves lives? Or changes our view of the cosmos? etc. The bigger the subject the less interesting it is. The further away from their everyday experience, the less interesting it is. Throw in the fact that they don’t like to be embarrassed and admit they don’t know or don’t understand something, and that for them praising me means automatically lowering themselves, it’s a wonder they don’t hate me even more.

Recently I got a reply letter from Professor David Suzuki, after I sent my inventions to a few dozen famous environmental activists. I’m publishing it here so that you will see what I have to deal with.



David Suzuki Foundation
SEP 19 2022
2211 West 4th Avenue
Suite 219
Vancouver BC
Canada V6K 4S2
604 732 4228 tel
604 732 0752 fax
www.davidsuzuki.org

Dear Mr. Strudowitz:

Are you actually filling up
YouTube with all this stuff?
You are not an inventor, you
just dream up pie-in-the-sky
"solutions". You do not invent
anything. These are hallucinations
created by thinking you're
smarter than millions of
people seriously looking for
solutions. Stop wasting
computer space and paper.

David Suzuki

SOLUTIONS ARE IN OUR NATURE

OK 😊 So now I'm copy-pasting my answer which I posted in my Facebook and Twitter (along with this scan of his letter)

dear David Suzuki
David Suzuki Foundation
Tracy Jacobson

Severn Cullis-Suzuki

i have to admit that i read your letter a few times by now, and each time i'm laughing out loud from your arrogance and frustration.

first of all you don't feel any need for logical reasoning like "in this or that invention this assumption or that step is wrong..." etc. instead you announce that all 50 (more or less) inventions that i highly doubt that you've watched let alone understood deeply (considering how pompous your letter is) are "hallucinations".

putting aside the fact that you never invented anything nor discovered anything in your life (according to Wikipedia), let me assure you that I AM smarter than millions of people, demonstrated by the fact that you people don't do anything against AI although it will kill you all in 20 years according to all the experts in this field. you're welcome to look in my https://www.neo-luddism.org/ website if you don't believe me, believe the experts. most humanity including you ARE idiots.

second of all, nobody (and i sent my inventions to thousands of scientists) ever dismissed all my ideas. i had like 3 people EVER dismissing A SINGLE idea, and when confronted openly to explain where i'm wrong it turned out to be egotistical and not rational (much like your objection).

that is not to say that i'm incapable of making mistakes, i do err from time to time, but of course when i encounter an error i fix it or if it's irreparable i delete this idea and i do not even dream of calling it an invention.

when i was about 16 years old (and definitely smarter than your mediocre self) i invented my first invention which was "phage therapy" independently.
https://www.youtube.com/watch?v=bmKMIP91lTE
after being ridiculed by the idiotic biology teacher (you two would find a lot in common) because she never heard of anything like that, so it can't be true, someone would have done this already bla bla, two years later during the army i watched this BBC documentary explaining how not only this is working, but that scientists say this will be humanity's only chance after we run out of antibiotics. so not only it's not "pie in the sky" as you falsely claim, but it even happens spontaneously in the field! (watch the BBC documentary).

unfortunately i suffer from ADD which is a condition that prevents me to concentrate on anything for more that a few seconds. this prevents me to get formal degrees like you, but this makes me a lot smarter than you, because of a whole like of compensation with intellect for all the things that i can't do like you.
to continue your computer metaphors: you have mediocre hardware and mediocre software (not flexible, because it was never forced to be); i have shitty hardware but amazing software from being forced to understand from bits and pieces all my life, seeing the forest and not the trees like normal people.

many times i invent something huge independently only to find out later that some genius in the past beat me to it. of course when this happens i always note this in my invention and explain what is my original contribution.
for example see the quickened time invention for the explanation to dark matter and dark energy

that turned out (after the fact) to be rooted in something that the smartest person in history (William James Sidis) hinted towards.

do i really have to mention all the genius people of the past who got ridiculed in their time: from Einstein to Van Gogh from Galileo to Semmelweis, from Cantor to Darwin, Boltzmann to Ramanujan and so on I don't think there was ONE great person in the history of the world who didn't suffer from narrow minds such as yourself. is this a proof that i'm right? no, but it means that your brain-envy (like penis-envy got it? lol) is not my problem.
for example when i sent (in your field, genetics) my solution for viruses (automatic virus vaccine) to Nature magazine, it passed there between a lot of people, and not one of them told me that i'm wrong. they later answered that this wasn't tested. (which is their way to say it's not profitable / patent-able / worth the corporate time). duh! if i had the resources to produce it i wouldn't send it to them, i would have produced it and cure people!

the most ironic thing in your letter is the bottom line of your "letter paper" which says: solutions are in our nature. lol! disrespect to things you find difficult to understand is in your nature. being arrogant and rude to superior (intellectually) people is in your nature. solutions? not so much. if you ever invent or discover anything original please let me know - you have my address already!

all the best and consider therapy sessions for your inferiority complex, it will help you invent and discover, i'm serious! my flow of inventions started at the age of 40 when i stopped chasing after a day-job and a wife. i think your equivalent to that - your worries - is your ego. try to enjoy what you do have, popularity from the crowds, instead of hating me like Salieri hated Mozart. it will do you good.

I will conclude with my correspondence with Dr. Francoise Tibika from The Institute of Chemistry, The Hebrew University of Jerusalem:

Hello Nir

I got your email. But unfortunately you hurt the most precious point of academia people and this is their ego. Don't be surprised if no one listens to you.

Except for this how do you know you are the biggest inventor in the world? Did you meet everyone?

OK 😊 So my answer to her was:

Hello Dr. Francois Nellie Tibika,

I think you are right about the ego of academy people, it is very disturbing for them that a layman from the street comes along and thinks he understands.

As for why I am the greatest inventor of those who live in the world at the moment, as you can see, I have no shortage of ego myself, but I will soon explain why.

True, it is impossible to meet everyone, theoretically there may be many people like me, but of the well -known, I'm at the lead by far, according to some clear criteria:

(1) All other inventors concentrate only on small and commercial things, I concentrate on great things that most can save the world literally.

You're Invited to see in my books

https://www.amazon.com/Official-Guide-Saving-World-ebook/dp/B081ZB7WPY

https://www.amazon.com/Official-Guide-Saving-World-Again-ebook/dp/B08BPHSMLM/

Amazon does not allow me to publish free for the public, so I chose the minimum price, but you can download them for free in Library Genesis:

http://libgen.rs/search.php?req=nir+strulovitz&lg_topic=libgen&open=0&view=simple&res=25&phrase=1&column=def

Or just tell me and I will happily send them for you to read.

(2) All other inventors have one or two scientific fields which they deal with; I deal with all areas of science (except math that unfortunately my Attention Deficit Disorder does not allow me)

(3) Everyone does it for money; I do it for free as a volunteer at the expense of my own private time to help humanity without any additional interest. That's why everything is published and open to copy.

For example, let's look at Elon Musk (who I think is the biggest entrepreneur of our era, and the biggest industrialist of our era, but not the biggest inventor, despite what the public thinks):

(1) Musk's rockets are making space access cheaper, but it still costs a lot of money and very polluting, it's not something that can save the world population. The electric cars are indeed in the right direction of saving solar energy, etc., but Musk did not invent the electric car.

(2) In fact, all Musk's ventures are various transportation solutions (space transportation, electric transport above the ground, and under the ground), he also invests in inserting electrodes to people's brain but I try not to think of that, it is horrifying in my view.

(3) Musk is very rare in the sense that he cares about humanity, but he is the richest man in the world right now (the richest under the table is Putin, but Musk is the richest on the table), so it will be a little ridiculous to say he doesn't do things to make commercial and profitable.

By the way, a very beautiful venture of Musk against artificial intelligence is OpenAi, my equivalent is my website against artificial intelligence, so on this topic in terms of concern for humanity we are "even":

https://www.neo-luddism.org/

But if there is someone who is more suitable for the title of the greatest inventor of our time (a living person is currently doing good things for humanity in dozens of fields at the highest level) please tell me who and I will look who he / she is and I will try to get better.

And if you have an idea how to promote one of my inventions (and thus help humanity!) I would be very happy and I will be thankful for any offer/comment/idea/thing.

https://www.greatestlivinginventor.com/

Thank you,

Nir.

OK 😊 so she asked me to send her a copy of my books and I send her the first and second TOGTSTW books (this one is third but it didn't exist yet!) and she thanked me and said she will read it later alas that was our last correspondence. But thank you Dr. Tibika for your very valuable insight:

You hurt the most precious point of academia people and this is their ego.

Don't be surprised if no one listens to you.

Nir Strulovitz, Haifa – January 2023.

Chapter 1 – Multiple Sclerosis Cure

White cells attack cover of nerves because it "reminds" them of an old virus (Herpesviridae and HERVs), so we inject into that (brain, spine) many pieces of that type of virus (broken by radiation) as decoy

This invention came when I heard about the condition of the actress Christina Applegate. Our family loves watching her sitcom Married... with Children, so I really wanted to help since there was no cure.

If you don't know what multiple sclerosis is, you can see a friendly explanation here:

Multiple sclerosis - causes, symptoms, diagnosis, treatment, pathology

by Osmosis.org

https://www.youtube.com/watch?v=yzH8ul5PSZ8

OK so imagine the neurons in the brain like electricity conductive wires, with a coating of plastic insulating sheath.

So you know how this plastic insulating sheath has different colors,

https://en.wikipedia.org/wiki/Electrical_wiring

for example striped green/yellow color means protective earth / ground in Europe.

So in natural wires that are called neurons this insulating sheath is called myelin.

https://en.wikipedia.org/wiki/Myelin

In nature instead of plastic this insulating sheath is made of phospholipid

phospholipid are used for construction of the cell walls but also something more interesting for us now, they are used as "anchor" for certain proteins.

Okay, here is the key paragraph from the Hebrew version of Wikipedia:

"the most common theory is that a viral infection causes the weakening of the immune system and a abnormal response later along the years. in the molecular level, the cause is the resemblance (similarity) between the virus and a component of the central nerve system, which might cause a confusion of the immune system cells. so then the immune system attacks the nerve system."

Now I'll exaplin using a metaphor:

Let's say the crew of a warship returned home to California and everybody hang out on the beach so you can't see their uniform but you can see their tattoos. Suddenly there is a bar fight (pub brawl) between the good soldiers and some bad local criminal gang and the Military Police must identify quickly who's who using only the tattoos.

Let's suppose all the soldiers have tattoos, and the Military Police guys know how to tell the difference between sailor-tattoos which are guys that are the good guys, and prison-tattoos which are the bad guys.

So in our story the Military Police are our "antibody"'s. They know how to recognize the problematic tattoos which are called "antigen"'s, which is short for "antibody generator". Because if there is a new kind of bad guys, our body (the military) will generate a new kind of Military Police especially for this new kind of bad guys, this new policeman (antibody) knows how to recognize this new criminal tattoo.

Multiple Sclerosis is an autoimmune disease. This means that the military is attacking the good guys, because the Military Police (antibody) erroneously thinks that the good tattoos are bad tattoos that the body once saw (many years ago). Some current "trigger" reminds our immune system of an old threat, but instead of fighting the real threat our immune system is mistakenly fighting our own nervous system.

Normally the bad tattoos are called antigen, but if the body (military) is mistaken and attacks his own good guys, because there was a good tattoo which looked similar to a bad tattoo, then we also call this confusing good tattoo an antigen.

An antigen is anything that lights up the Military Police (the antibodies).

By the way the antibody's have the name Ig, which stands for immunoglobulin, so imagine the instead of an MP on their arm imagine the Military Police with "Ig" armband.

OK so now we can understand the first paragraph of this article. So we'll read and then explain in our story language.

Serum IgE reactive against small myelin protein-derived peptides is increased in multiple sclerosis patients

https://pubmed.ncbi.nlm.nih.gov/16996143/

by Daniel D. Mikol , Charles Ditlow , Danielle Usatin , Pinaki Biswas ,

Jack Kalbfleisch , Andrew Milner , Emanuel Calenoff.

Journal of Neuroimmunology 180 (2006) 40 – 49

"It is generally assumed that the disease trigger might be an infectious agent that instigates an appropriate immune attack ... but that through the process of molecular mimicry ... an autoimmune attack against a CNS [Central Nervous System] target antigen ensues.

So the story goes like this: the Military Police saw someone bad with a criminal tattoo, but the police made a mistake: they once saw a bad tattoo that looked similar to the tattoos they're seeing now on the good guys (the good guys here is our brain and spine), so the Military Police (anti-bodies) is now attacking the good guys, and the good guys' tattoos are interpreted mistakenly as bad tattoos, by the confused Military Police.

So now the scientific paper tells us what good tattoos are attacked (treated as antigens):

Potential myelin or myelin associated target antigens include but are not limited to: myelin-oligodendrocyte glycoprotein (MOG) (Gardinier et al., 1992), myelin basic protein (MBP) (Zamvil et al., 1986), proteolipid protein (PLP) (Greer et al., 1997), oligodendrocyte-specific protein (OSP) (Bronstein et al., 1999) and oligodendrocyte-myelin glycopro-tein (OMgp) (Mikol and Stefansson, 1988).

We have a list of possible candidates for what the bad tattoo really are, the bad guys that the military police (the antibodies) remember from years ago, and now confuse them with our good guys.

Infectious agents

https://en.wikipedia.org/wiki/Multiple_sclerosis#Infectious_agents

Here are two main example candidates:

Epstein–Barr virus (from the human herpesvirus types in the herpes family)

https://en.wikipedia.org/wiki/Epstein%E2%80%93Barr_virus

In 2022, it was shown that recent EBV infection causes a 32-fold increase in the risk of developing multiple sclerosis.

Association of human endogenous retroviruses with multiple sclerosis and possible interactions with herpes viruses

https://pubmed.ncbi.nlm.nih.gov/15782388/

by Tove Christensen

Wiley Online Library Reviews in Medical Virology (22 March 2005)

“Several herpes viruses, such as HSV-1, VZV, EBV and HHV-6, have been associated with MS pathogenesis”

Okay, so our body (military) is mistakenly generating these antibodies (Military Police) who wrongly recognize our own good guys (myelin) as if they are the bad guys (antigen). How can we help the good guys (myelin)?

There is a quote by:

G. K. Chesterton ("prince of paradox") in Father Brown stories, The Sign of the Broken Sword:

“Where does a wise man hide a leaf? In the forest. But what does he do if there is no forest? … He grows a forest to hide it in….”.

So this is exactly what we do here! We spread decoys and let the antibodies attack the decoys instead of our myelin

https://en.wikipedia.org/wiki/Decoy

just like a military aircraft gets rid of heat-seeking missiles by shooting away special flares that are burn very hot.

https://en.wikipedia.org/wiki/Flare#Countermeasure

So our best bet in choosing the decoy that the antibodies will prefer (more than our myelin) is to use the bad virus itself, but there’s a problem: if we put a live virus into our brain and spine the cure is worst than the disease!

So what we do is we chop up the virus using radiation, into a few pieces, and we make sure that the viruses are indeed properly chopped by passing the pieces through a membrane like a sieve, that is designed so that the whole virus is too big to pass through the tiny holes, but the smaller pieces (the broken virus) can pass. Or we can use a centrifuge for the same thing, the heavier complete virus will be separated from the smaller lighter torn pieces.

Finally, we take these random inactive pieces, and inject it into the brain and spine where the anti-bodies are attacking our nerves which remind them molecularly of the bad virus they once seen, and now they are seeing something that reminds them of this bad guy even more, so they leave alone our poor myelin and attack instead the decoys of the dead virus pieces.

What happens if we went through all the options of candidate for virus, and the body is still preferring to attack the myelin?

Then as a last resort we can produce myelin (like from brain tissues of animals) and try that as decoy. It’s not nice to kill animals but we are saving humans.

I'm saying as a last resort, in the same paragraph of the scientific paper that we talked about, they say:

"In animal models, a number of candidate myelin and neural proteins have been shown to trigger inflammatory demyelination (Schmidt, 1999)."

So we are using broken myelin pieces as a cure only if we went through all the possible candidates for broken virus pieces, but the antibodies are still there and are still attacking our precious working myelin.

Unfortunately, we don't know enough to produce artificial myelin synthetically. The article we quoted before has a list of the good tattoos that are attacked (treated as antigens):

Potential myelin or myelin associated target antigens include but are not limited to: myelin-oligodendrocyte glycoprotein (MOG) (Gardinier et al., 1992), myelin basic protein (MBP) (Zamvil et al., 1986), proteolipid protein (PLP) (Greer et al., 1997), oligodendrocyte-specific protein (OSP) (Bronstein et al., 1999) and oligodendrocyte-myelin glycopro-tein (OMgp) (Mikol and Stefansson, 1988).

But something a name is not the same as understanding it, let alone being able to build it ourselves.

Chapter 2 – Photographing Inside a Black Hole

using two-photon physics to help light come out of a black hole thus making a LIDAR to photograph the black hole's ground

Based on the first lecture in the course about black holes of the The Teaching Company (TTC)

(Today they are called The Great Courses (TGC)).

If we are standing on planet Earth and throw an apple upwards, the apple will fall back down.

Let's suppose we could throw the apple faster than the escape velocity, then the apple could have exited from Earth.

The escape velocity is different according to the mass of the Earth and the height that we're in.

The speed that is enough (sufficient) for escape when we are already high in the atmosphere, is smaller than the speed that we need when we are on the surface of the planet.

The escape velocity is named after the greatest speed (that is needed on the surface of the planet).

What if we were able to – each time that the apple slowed its speed a little – to increase it again?

If we could for example give the apple a push in each meter that it's getting up, the apple would not lose its speed it was able to escape from Earth.

For example if we had a mountain, and in every "floor" (story / tier / level) of the mountain (let's say every 1 meter) there was a teeterboard (Korean plank, like a seesaw or teeter-totter)

https://en.wikipedia.org/wiki/Teeterboard

Which is the Western version in the circus to the traditional Korean sport Neolttwigi or nol-ttwigi:

https://en.wikipedia.org/wiki/Neolttwigi

And let's suppose that up above we have a helicopter hovering above us all the time with a sack of apples, and the helicopter drops down on the teeterboard once in every fixed time (let's say once every 1 second) a new apple.

Our original apple starts at the height of the surface (ground level), waiting inside the first teeterboard.

Then "in exchange" for another apple that falls from above, the original apple rises up 1 meter, and now our original apple is waiting inside the second teeterboard.

And then "in exchange" to another apple that falls from above, the original apple rises up another 1 meter, and now the original apple is waiting inside the third teeterboard, and so on and so on.

OK that was the metaphor, and now from the parable to the moral (lesson) of the story.

Let’s suppose we are shining a light with a flashlight in a short flash directly downwards toward the black hole.

If the light is exactly perpendicular it manages to enter without any problem, and also to get down and hit the ground of the black hole.

Part of the light is reflected back by the object that the light hit (the ground of the black hole) and now there is reflected light that is trying to rise up.

This light that is trying to escape from the black hole cannot slow down, because light always “travels” (moves) at the speed of light, but it’s losing more and more energy (like shift to red). There still is a photon (a light particle) but it’s losing energy so it’s vibrating in a lower and lower frequency.

If we won’t help him, at first the reflected light (close to the ground level) is for example blue, then it loses energy and becomes, yellow, then red, the infra-red, then radio waves and then it’s impossible to recognize it at all. It disappears.

But what if we would help him? If each time we could give it a push towards a higher energy level, which means making it more towards blue, then it can reach all the way upwards and escape the black hole!

How do we do this? We need to use

Second-harmonic generation

https://en.wikipedia.org/wiki/Second-harmonic_generation

which you can see in this video by The Thought Emporium

https://www.youtube.com/watch?v=sF2RDJISnAs

Make Lasers Change Color! DPSS Lasers and Second Harmonic Generation (Frequency doubling)

from this video descritpion:

"With powerful enough lasers, the world starts behaving very differently. Using a nonlinear optical process called second harmonic generation you can merge pairs of photons in a laser beam to create a single photon with twice the energy. This means that one color of light is turned into another.

In practice this is done with infrared lasers which when shot through a special crystal merge to form a color like blue or green depending on the setup."

But we can't hold a crystal in there: it's inside the black hole: so what can we hold there? More lasers. This is good because in

Nonlinear optics

https://en.wikipedia.org/wiki/Nonlinear_optics

"The non-linearity is typically observed only at very high light intensities (values of atomic electric fields, typically 10^8 V/m) such as those provided by lasers. Above the Schwinger limit, the vacuum itself is expected to become nonlinear. In nonlinear optics, the superposition principle no longer holds."

This means that if you have strong enough lasers cutting each other at the same point, then the space itself begins to act like that crystal that we need, and scatter the light like a lens! Which means that point no longer obeys the superposition principle, which means the lasers do not ignore each other if they are very very strong.

You can also read this here:

Two-photon physics

https://en.wikipedia.org/wiki/Two-photon_physics

"In pure vacuum, some weak scattering of light by light exists as well."

This effect also protects us from gamma ray bursts that come from halfway across the universe:

"An analogy would be light traveling through a fog: At near distances you can see a light source more clearly than you can at long distances due to the scattering of light by fog particles. Similarly, the further a gamma-ray travels through the universe, the more likely it is to be scattered by an interaction with a low energy photon from the extragalactic background light."

Note: they interact even if they are not in the same direction! This is important because in our case they will definitly won't be, one photon will come from the ground of the black hole, and one photon will come from above from our "camera" spaceship.

So in our case the low energy photon will be our “picture” that we want to photograph (the reflected light from the ground of the black hole), and the strong gamma ray will be the laser.

So how is this actually done?

First of all in order not to fall into the black hole, the whole spaceship (our camera) is put into an orbit around the black hole, so that we follow the same spot on the black hole, black holes are rotating. Our spaceship is outside the event horizon in a safe distance.

Geosynchronous satellite

https://en.wikipedia.org/wiki/Geosynchronous_satellite

How do we know the speed and direction of the black hole rotation?

My method of photographing works only with black holes that are NOT feeding (accretion disk) right now. But we need the black hole to be feeding (accretion disk) in order to measure how it’s rotating.

So the solution is to feed it a little bit, just to measure the X-Ray from the little accretion disk we created, and soon after that this temporary accretion disk ends and we can take the photograph.

OK. So think of a big cross sign (like Christians bless Father (head) Son (heart) and Holy (one shoulder) Spirit (second shoulder)), we have the long vertical axis, which on one side “head” will be the light detector (which is our camera), and on the bottom side “heart” will be the ground of the black hole. On both sides of the short horizontal axis of the cross “shoulders” will be the “flash” of the camera, the strong lasers that light up the point that we want to photograph, and also they light points above it in special intervals along the long vertical axis of our cross.

The rays of laser shoot from the like the blades (slats) of a hand fan

hand fan

https://en.wikipedia.org/wiki/Hand_fan

from the center of each shoulder (the pivot of the hand fan) towards the long vertical axis and meet in midway.

If we could see the rays of laser then each shoulder will look like the highest point of a

Side-spar cable-stayed bridge

https://en.wikipedia.org/wiki/Side-spar_cable-stayed_bridge

and the other shoulder will be like its reflection in the water.

The road on which the cars are travelling that is hanging in the air above the water will be unified with its reflection and it will be where the powerful lasers meet, and also along this road the "photograph" result will travel from the "heart" down in the black hole, upwards to the "head" our camera light detector which is farthest away from the black hole.

Eventually all the lasers coming from each "shoulder" will be projected from the same laser which will be split and directed with individual adjustable mirrors, but at first we start with adjusting the mirror that is responsible for the upper most beam (the beam that is farthest from the blackhole.

We project this first beam and its counterpart from the shoulders, and lower them using the adjustable mirrors until the beams meet just below the event horizon.

We would know this because there is light just over the event horizon which so far almost could gotten out but couldn't because it nobody helped it, but now we help it with our lasers so we will suddenly detect a light coming out of the black hole with our camera (the light detector). Then we fix these first mirrors (this is the first link in our chain of amplifiers) and go on to set the next amplifier, until we have more light in the camera, coming now from both amplifiers, and so on, until we reach the bottom (the ground of the black hole). Here there will be a lot of light because our lasers will actually hit and heat something and this something (the ground of the black hole) will emit light. Every body - no matter its color - when you heat it emits some radiation, it's called black body radiation.

In every link in the "chain" we do a process similar to tuning your favorite station on your radio. We play with the knob until the signal gets loudest and clearest. Only here instead of sound it's light.

So now with all our mirrors in the right angle, we shoot a laser in all of them and measure the time it takes for the light to reflect from the ground all the way through all the light amplifiers to the camera. This time gives us an idea of the height of this spot on the ground.

This is just like LIDAR

Lidar (like a radar from laser)

https://en.wikipedia.org/wiki/Lidar

but instead of measuring an ancient city hidden in the rainforest we are measuring the topography of the ground of the black hole, one point at a time.

Note:

When you get to one and a half (1.5) Schwarzschild radius there is the

Photon sphere

https://en.wikipedia.org/wiki/Photon_sphere

But I think the photons there are not as powerful as our lasers because our lasers “fall” with the black hole gravity while the photon sphere light is on the same level all the time.

If the photon sphere just blares the picture, than we can take the average of a few photos.

Chapter 3 – Nitrogen Fluorine Hydrogen Alien Life

astro-biologists look for for signs of extra-terrestrial life assuming that aliens are built like us (search for water carbon etc). i show a different possible model for life based on other building blocks.

Extraterrestrial life or alien life

https://en.wikipedia.org/wiki/Extraterrestrial_life

1) organic molecules - carbon as only candidate

2) follow the water - water as only solvent

3) Goldilocks zone - not too cold not too hot, just like Earth

This is the basic chemical formula for life on Earth:

Animals burn glucose with oxygen to get out energy and produce byproduct carbon dioxide and water.

Plants do this backwards:

Plants put in energy from the Sun this is called photosynthesis the plants take carbon dioxide and water, and make the glucose and byproduct oxygen.

$C_6H_{12}O_6 + O_2 \rightarrow CO_2 + H_2O$

Glucose

genetic code made from carbon is easily damaged (by radiation in space for example). What if life was made of atmos that holds on tight?

So based on symmetry consideration looking in the periodic table, I replaced the oxygen with fluorine, and I replaced the carbon with nitrogen:

$NH_4F + F_2 \rightarrow NF_3 + HF$

So each component is toxic for US but they all exist (I checked that it's not chemically "forbidden"):

Ammonium fluoride

NH4F

https://en.wikipedia.org/wiki/Ammonium_fluoride

Ammonium fluoride is the inorganic compound with the formula NH4F. It crystallizes as small colourless prisms, having a sharp saline taste, and is highly soluble in water. Like all fluoride salts, it is moderately toxic in both acute and chronic overdose.

Fluorine

F2

https://en.wikipedia.org/wiki/Fluorine

Fluorine is a chemical element with the symbol F and atomic number 9. It is the lightest halogen and exists at standard conditions as a highly toxic, pale yellow diatomic gas. As the most electronegative element, it is extremely reactive, as it reacts with all other elements except for argon, neon, and helium.

Among the elements, fluorine ranks 24th in universal abundance and 13th in terrestrial abundance.

Nitrogen trifluoride

NF3

https://en.wikipedia.org/wiki/Nitrogen_trifluoride

Nitrogen trifluoride (NF3) is an inorganic, colorless, non-flammable, toxic gas with a slightly musty odor.

Hydrogen fluoride

HF

https://en.wikipedia.org/wiki/Hydrogen_fluoride

Hydrogen fluoride is a chemical compound with the chemical formula HF. This colorless gas or liquid is the principal industrial source of fluorine, often as an aqueous solution called hydrofluoric acid.

Hydrogen fluoride is a highly dangerous gas, forming corrosive and penetrating hydrofluoric acid upon contact with moisture. The gas can also cause blindness by rapid destruction of the corneas.

About HF as solvent, even Carl Sagan agreed to this.

Hypothetical types of biochemistry

https://en.wikipedia.org/wiki/Hypothetical_types_of_biochemistry#Non-water_solvents

Carl Sagan once described himself as both a carbon chauvinist and a water chauvinist; however, on another occasion he said that he was a carbon chauvinist but "not that much of a water chauvinist". He speculated on hydrocarbons,: hydrofluoric acid, and ammonia as possible alternatives to water.

in the online book by Robert A. Freitas Jr. :

Xenology: An Introduction to the Scientific Study of Extraterrestrial Life, Intelligence, and Civilization

http://www.xenology.info/Xeno/8.2.2.htm

(with the USS Enterprise (NCC-1701) from Star Trek on the cover)

in the chapter:

8.2.2 Alternatives to Water

You can see that HF is exactly like water but for colder things, and also there is a funny cartoon.

“Hydrogen fluoride has a larger liquidity range than water and has hydrogen bonding as well as an acid-base chemistry (in which nitric and sulfuric acids act as bases!). It also has a large dielectric constant and a sizable specific heat. The major difficulty with HF is its extreme cosmic scarcity. However, this need not be a fatal objection in view of the widespread use of the equally rare element phosphorus in terrestrial biochemistry.”

A few months ago, scientists found a large deposit of HF in a galaxy far far away:

article in DailyMail:

By Ryan Morrison

4 November 2021

https://www.dailymail.co.uk/sciencetech/article-10165481/Fluorine-detected-galaxy-12-BILLION-light-years-away.html

Fluorine – an element found in our bones and teeth – is detected in a galaxy 12 BILLION light years away, marking the most distant detection yet

Astronomers detected fluorine in a dust cloud surrounding galaxy NGP–190387

The light from this galaxy originated when the universe was 1.4 billion years old

Finding an abundance of fluorine this early helped pin down how it formed

The team predict it originated in the cores of short-lived Wolf-Rayet type stars

This article is about a scientific paper in Nature Astronomy volume 5, pages 1240–1246 (2021)

The ramp-up of interstellar medium enrichment at $z > 4$

by Maximilien Franco, Kristen Coppin, Jim Geach, Chiaki Kobayashi, Sandra Chapman, C. Yang, Eduardo Gonzalez Alfonso, Justin Spilker, Asantha Cooray & Michal Michalowski

https://www.nature.com/articles/s41550-021-01515-9

I couldn't find it on Sci-Hub :-(

they didn't look for fluorine, they were looking with gravity lens at a far away galaxy and happened to find fluorine. while i'm saying - let's look for fluorine on purpose.

IS IT POSSIBLE?

Could a nitrogen based life form be possible?

https://www.quora.com/Could-a-nitrogen-based-life-form-be-possible

very nice answer by Alex Randomkat

he acknowledges that it will easily explode, but also brings positive aspects:

he says they can live in the cold and the dark without oxygen (space anyone?)

they also will benefit from having a solvent like ammonia in their body (like we have water).

he even explains how they may have a very slow version of photosynthesis if they have ammonia they can make hydrazine and from that make N2. he says this requires nitrite that can come from lightning strikes.

but then i looked for

Inorganic polymer

(a chain of atoms without carbon backbone)

https://en.wikipedia.org/wiki/Inorganic_polymer

and there was a picture of (SN)x

S-N-S-N-S-N ...

and also in

Smart inorganic polymer

https://en.wikipedia.org/wiki/Smart_inorganic_polymer

one of the common backbones is

Polyphosphazene

https://en.wikipedia.org/wiki/Polyphosphazene

P-N-P-N-P-N

in all kinds of shapes including rings.

these polymers have these attractive properties:

high flexibility of the backbone, radiation resistance,

high refractive index,

ultraviolet and visible transparency,

and fire resistance.

(from the fire resistance i gather that it's stable and doesn't explode easily!)

then I found that a combination of carbon and nitrogen is taken very seriously by scientists:

Titan's Seas May Hide a Strange Form of Nitrogen-Based Life

Researchers at Cornell have theorized a life form that could withstand the freezing temperatures on Saturn's moon

By John Wenz Mar 2, 2015

https://www.popularmechanics.com/space/a14342/titans-seas-may-hide-a-weird-form-of-nitrogen-life/

This probe was supposed to dive in and find out but it didn't get the necessary funding (you can see an artist's impression of its lake lander boat and someone also proposed a submarine):

Titan Mare Explorer (TiME)

https://en.wikipedia.org/wiki/Titan_Mare_Explorer

This is the scientific paper from Cornell:

Membrane alternatives in worlds without oxygen: Creation of an azotosome

by: James Stevenson, Jonathan Lunine, and Paulette Clancy

published in: Science Advances ,27 Feb 2015 , Vol 1 Issue 1

https://www.science.org/doi/10.1126/sciadv.1400067

I found also another article that talks about this but again it’s combining carbon with nitrogen.

Fluorine-Rich Planetary Environments as Possible Habitats for Life

by: Nediljko Budisa, Vladimir Kubyshkin, and Dirk Schulze-Makuch

published in: Life (Basel), 2014 Sep; 4(3): 374–385.

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4206852/

So to sum up my invention: forget carbon look for the nitrogen as the skeleton (backbone)!

The problem is that this is hard technically:

In an article

Fluorine in space

By Henrik Jonsson

published in Chemistry World

https://www.chemistryworld.com/opinion/fluorine-in-space/8740.article

From 9 July 2015 (this is before the 2021 discovery which was probably a huge huge cloud to be seen so far away)

He says:

“The origin of fluorine remains such a mystery, because it is difficult to study. Traditionally stellar spectroscopy has focused on determining stellar abundancies from atomic spectral lines in the optical wavelength range, and for ‘normal’ stars fluorine does not show any such lines. Instead, infrared HF molecular spectral lines have to be used, but many of them fall in wavelength regions for which our atmosphere is opaque, making them invisible to terrestrial observatories.”

Then duh we should look for it with space telescopes, for example Kepler space telescope is looking for things like Earth, but maybe the aliens are different than us?

In the scientific paper:

On the cosmic origin of fluorine

by: Nils Ryde from: 2020

published in: Journal of Astrophysics and Astronomy volume 41, Article number: 34 (2020)

https://link.springer.com/article/10.1007/s12036-020-09657-4

He says:

The cosmic abundance of fluorine is several orders of magnitude lower than that of the neighboring elements in the periodic table. It is only the 24th most common element in the universe.

Wikipedia says:

Among the elements, fluorine ranks 24th in universal abundance and 13th in terrestrial abundance

https://en.wikipedia.org/wiki/Fluorine

Fluorine is relatively rare in the universe compared to other elements of nearby atomic weight. On Earth, fluorine is essentially found only in mineral compounds because of its reactivity. The main commercial source, fluorite, is a common mineral.

https://en.wikipedia.org/wiki/Origin_and_occurrence_of_fluorine

It doesn’t make sense that the neighbors of fluorine are so common, and fluorine is “missing”. Maybe we can’t see through the opaque atmospheres of other planets? How come it’s about twice as common on Earth than it is in the rest of the Universe? Maybe we just don’t know how to look for it? Maybe we don’t try because it’s poisonous to us?

So if we only look for things where it’s easy to search and not where the thing really probably is, then we are not better than the streetlight effect, or the drunkard's search principle

https://en.wikipedia.org/wiki/Streetlight_effect

Nasreddin's ring

Mullah had lost his ring in the living room. He searched for it for a while, but since he could not find it, he went out into the yard and began to look there. His wife, who saw what he was doing, asked: "Mullah, you lost your ring in the room, why are you looking for it in the yard?” Mullah stroked his beard and said: "The room is too dark and I can’t see very well. I came out to the courtyard to look for my ring because there is much more light out here".

Chapter 4 – Helicopter Backup Rotor

helicopters can use autorotation but they don't have an ejection seat. so the solution is a passive rotor below the helicopter then the helicopter can capsize and land safely even without the main rotor.

Helicopters can land even if the engine dies, by using autorotation

https://en.wikipedia.org/wiki/Autorotation

but what happens if the helicopter loses its big rotor completely?

[for example this happened in the "accident" that Donald Trump "miraculously" did not board at the last minute. when two very rare things happen together - isn't that suspicious?

https://en.wikipedia.org/wiki/Legal_affairs_of_Donald_Trump#Business

https://en.wikipedia.org/wiki/Trump_Entertainment_Resorts#The_beginning]

And of course this can happen not just by accident but also by somebody shooting on this weak spot (vulnerability) of a helicopter: the mast and the hub and the main rotor itself.

So my idea is to install in every helicopter a secondary main rotor below the helicopter.

This way in the deadly scenario that the helicopter loses it's upper rotor, the helicopter "capsize" (turns upside down) because of air resistance, and now the bottom rotor becomes the new top rotor.

Normal flight procedure

The helicopter will have retractable landing gear that's used only in takeoff or landing, but the rest of the time they are "hidden" folded inside.

https://en.wikipedia.org/wiki/Landing_gear#Retractable_gear

The bottom rotor is not used at all: it is not spinning and it is not connected to the engine (the special transmission that connects between them is disengaged).

So the pilots and passengers can climb on and off safely and the helicopter stands on the ground using its wheels so the bottom rotor is not touching the ground.

Emergency flight procedure

In the deadly scenario when you lose your primary rotor, the helicopter rolls over (capsize) because of the air drag falling down, so the bottom rotor is now on top and the helicopter automatically does autorotation.

Then if the engine is ok and it's only the rotor that is lost, the pilots can even connect between the engine and the backup rotor. (engaging the special transmission), which should probably be done manually by pulling an emergency lever.

This is useful if the helicopter is currently above a place that is not friendly for landing, like behind enemy lines, or over trees or sea.

Chapter 5 – Passive Anti Freezing Regulator

prevent regulator failure in scuba and mountaineering passively by filtered ionized air and induction heating

problem

this idea came after watching a few documentaries were people couldn't breath because their regulator failed.

Our Everest Challenge

https://docuwiki.net/index.php?title=Our_Everest_Challenge

near the peak Ben had to change one regulator and then another one.

in the seires How the Earth Works in the episode Will Iceland Poison the Skies?

https://www.imdb.com/title/tt3477406/?ref_=tt_eps_top

https://twitter.com/lizbonnin/status/225551283132706816

immediately when entering the water in Iceland, Liz's regulator failed.

i've seen it in Cooper's Treasure too.

the reason for this failure is that when gas goes from being squeezed in a tight place to a place where it can expand, the gas cools.

https://en.wikipedia.org/wiki/Joule%E2%80%93Thomson_effect

if this cooling is too much, the regulator valve freezes in its open state and all the air runs away (which causes even more freezing).

We can see how the regulator is built from the inside in this very nice video by Jonathan Bird

How do SCUBA regulators work? | SCUBA 101

by BlueWorld_plus

https://www.youtube.com/watch?v=wDbA3pOaIFk

Also we can read about the freezing problem in Wikipedia here:

https://en.wikipedia.org/wiki/Mechanism_of_diving_regulators#Regulator_freezing

there are mechanisms that take a little warmth from the environment, but underwater and in high mountains the environment is very cold.

solution

we cannot use the warmth of the exhaled air that comes out from our mouth, because (1) this air needs to get out as freely as possible to get rid of the CO2 (2) this air has moisture which we must get rid off (it might even freeze and create dangerous ice crystals that we might breath) and (3) the air we breath out is at a constant temperature and here we prefer something responsive which can be not-warm-at-all or very-warm depending on the situation.

so what we need is something simple that works without external energy and without moving parts.

but we do have a part here that's moving fast (the air through the valve) so with preparation in advance we can use this as our source of energy.

first we need the air in the tank to be ionized. we need to make sure there is no ozone

https://en.wikipedia.org/wiki/Air_ioniser#Ions_versus_ozone

so after ionizing the air, we cycle it through a filter with Freon

that's the thing that made the ozone hole

https://en.wikipedia.org/wiki/Chlorofluorocarbon

which catalyze the breakdown of ozone (O3) into oxygen (O2)

https://en.wikipedia.org/wiki/Ozone_depletion

and this freon is closed inside a cell with membrane walls. it only operates on the cycled air while that air passes in the freon's closed cell.

so in the end of the process we take just air (without the freon) and now it's without ozone. we compress the air and put it into tanks normally, it is safe to breath, but it now also can be used as our electro-motive force, for our heating system.

https://en.wikipedia.org/wiki/Electromotive_force

ok so in the case of a freezing-open of the valve, the air starts to flow fast which means fast flow of charged particles (because our air is ionized).

okay so from here the process is very similar to induction cooking, but instead of a metal pan we warm the metal valve (so we defrost / thaw it without touching it).

https://en.wikipedia.org/wiki/Induction_cooking

from this part on i don't know enough about electricity, so someone else needs to come with the exact details, but all the "parts" are correct:

the electricity needs to flow in a coil, so we make the flexible air tube wrap around like a coil close around the valve (before connecting to and "feeding" the valve itself).

so now there when the valve is stuck open (frozen) there is a magnetic field inside the coil. the valve needs to be made of something that contains iron.

you can check it like they explain here (if a magnet sticks to it, it contains iron)

How Induction Cooking Works

by GE Appliances

https://www.youtube.com/watch?v=QPd963cCeec

so now there are (i guess) turbulent magnetic fields inside the iron.

the valve warms and unfreeze / thaw.

so now the valve is un-stuck and closes the flow of air.

so now there is no charged ions flow so no magnetic field so no heating.

What is induction heating. How does it work. See live demonstrations.

by EFD Induction

https://www.youtube.com/watch?v=JnWe_X20QhY

(in this video we also see that it's very focused, so the rest of the mask will not heat which is good)

because our electrical current is Direct Current (DC) and induction heating works on Alternatic Current (AC), we need something to change the elctricity from DC to AC, this is called a power inverter:

https://en.wikipedia.org/wiki/Power_inverter

Static inverters (solid state) do not use moving parts in the conversion process.

i hope one day such regulators will help people explore personally the mountains of planet Mars and the oceans of the Jupiter's moon Europa!

Chapter 6 – Ferromagnetic Glass Micro Pearls

an environmental friendly substitute for plastic packaging by transforming regular glass into a smart material

an environmental friendly substitute for plastic packaging.

imagine a new kind of "smart" material that has ALL THE GOOD qualities of plastic (flexible, air-tight, transparent, durable)

but have NONE OF THE BAD qualities of plastic (pollution, dangerous chemicals, flammable, hard to retrieve and recycle)

How does it work?

firstly, we need to understand what ferromagnetic means. it means a material like iron, that if you put it inside a magnetic field of a big magnet it becomes a little magnet. then even after you take away the big magnet, the little magnet stays magnetic.

this happens because we gave time for all the little parts in the iron to align in the same direction. if we change the direction of the big magnet fast, then the iron stops being a magnet (let's call this de-magnetized).

secondly, we need to understand how little ball shaped magnets behave when they are put together in large numbers.

they behave just like magnetic toys!

important note:

packaging balls or on the micro scale (less than a millimeter) so they are NOT DANGEROUS swallowing a few. also there is no danger in swallowing many after they are de-magnetized as will be described shortly.

see in this video by little lady on YouTube:

Fun Colorful Magnetic Bead Review

https://www.youtube.com/watch?v=NjUNF8WhMh4

notice when she stretches a film or ribbon of them and it's not torn, so imagine the same thing at a much smaller scale. so you can see why it will be flexible like plastic polymer.

thirdly we don't want metal touching our food (or whatever we package), so we are coating each little ball in glass.

this is why I'm calling it pearls, the tiny metal ball is like the nucleus (intruder / graft) and the glass coating is like the glistening pearl sac (calcium carbonate) around it.

glass coating metal is possible, you can see here:

Glass-coated wire

https://en.wikipedia.org/wiki/Glass-coated_wire

our "pearls" are made in a factory in high heat (so the glass becomes soft but not the metal), and the result is that when each tiny ball cools down the metal (which previously expanded in the heat) becomes smaller, and so there is a vacuum between the inner metal ball and the surrounding glass sphere.

this vacuum gives each ball the property of buoyancy so it's easy to collect them from the surface of water, they just float there, and you pass a magnet above them and they "jump" up.

the glass coating needs to be thick enough to withstand such blows and also the air pressure on the inner "semi" vacuum ("semi" because it's not an empty glass sphere - instead some of the volume inside is occupied by the metal ball). A sphere shape resist pressure from outside very well, this is why submarines going to the ocean's abyss look like spheres.

so now finally we have all the parts of our "building block", so let's see how we use it in everyday life.

How it's used at home?

let's say mom goes to the supermarket and buys an apple which is individually wrapped in "pearls".

So she comes home and puts it in the de-magnetizer. this is a machine that looks like a microwave, and also like the box of the microwave the de-magnetizer is a Faraday cage, so mom is outside and she is protected from the changing magnetic field inside.

what happens inside the simple machine is this:

if this is done in air, the "pearls" stop being magnetic and fall down to a collector;

if this is done in water and then the "pearls" float up to a collector.

anyways at the end of the process mom opens the machine and takes out the unwrapped apple, and once a month she takes out the de-magnetized pearls to the supermarket (who gives her some incentive for recycling, like with plastic).

How it's used at the factory?

let's say we own an apple factory.

first there is a central factory in every city that receives all the used pearls from the supermarkets, cleans them (like with boiling water) and magnetizes them again by putting in one layer and passing them between two ends of a strong electromagnet for a few hours.

now from this re-magnetization the pearls are arranged in big cubes and sent to our apple factory.

so here we "peel" the cubes into sheets. it's really like slicing them you can see here (it's very long, jump to minute 5:00 if you're tired)

Playing with 60 000 Magnetic Balls ☆ Slow Motion ☆ 100+1% Satisfying Video

https://www.youtube.com/watch?v=edIqAUHoFs0

MAGNET MASTER

another cool thing to notice in the video is that even if the material is cut (like by accident in the delivery truck to the supermarket) it automatically fixes itself.

okay so once we have an isolated sheet it behaves like plastic cling wrap at home, we fold it over the item (apple) and trim the excess edges.

How does it save earth?

even if "pearls" get to the ocean, they just "pass" through the animals, they are not endocrine disruptor like plastic.

also if "pearls" get to the ocean they float and a low flying drone with a magnet can collect them back cheaply.

I hope by now you understand the pearls are totally safe for the environment and for people. NOT LIKE beads for example:

https://en.wikipedia.org/wiki/Environmental_impact_of_Mardi_Gras_beads

How is it "air tight"?

besides obvious answers like scaling it down so the gaps between the balls shrink, and using more than one layer of wrapping,

we are used to thing about permiability like water percolating into the ground, but the ground particles (dirt grains) do not attract each other like magnets, so it's easy for the water to push them over one at a time.

but this thinking does not apply here, because in pearls the pieces attract each other so they are stuck together stronly so because of the surface tension of the water, the water droplets can't pass.

so for example we can use a bottle made from pearls and the liquid will not leak. the only down side is that it will be flexible (like a plastic bag), and not shapely like the "curvy" bottle.

but its flexibility also means that you can do cool things with it that you can't do with a bottle, like pushing a straw through it and start drinking. and it doesn't leak, because it returns and closes tightly around the "puncture" made by the straw.

Chapter 7 – Antarctic Sinking Chamber Lichen Tunnels

a non-chemical and low-energy solution to clean CO2 out of the atmosphere

Antarctic sinking chamber lichen tunnels

Solution to clean CO2 out of the atmosphere, that is non-chemical and very low energy!

Introduction

All the existing solutions either involve problematic chemicals like sodium hydroxide, or require a lot of energy (like for high heat or pushing through membrane).

you can see this existing solutions here:

https://en.wikipedia.org/wiki/Direct_air_capture

https://en.wikipedia.org/wiki/Carbon_dioxide_scrubber

The little electricty that is needed in my solution - for opening and closing doors and pipes - can be harvested from the strong winds which we use for most of the process.

How does it work?

My method uses the fact that the different gases in the air have different density, so the heavier gases sink to the bottom and the lighter gases float to the top.

we are talking about transparent gases but imagine it like you know i'm sure in liquids of different density (different specific mass).

https://en.wikipedia.org/wiki/Density

https://en.wikipedia.org/wiki/Density#/media/File:Artsy_density_column.png

so in everyday life it's not like we lie on the floor and breath CO2 and then we stand up and breath oxygen, because the winds and heat (random movement of molecules) mix the air all the time.

but if you have a place that is cold and closed for some time then the heavier CO2 (atomic mass 44) will sink under the lighter nitrogen (14) and oxygen (16)

Terminology

i couldn't find the exact name of this process, so I call it sinking chamber:

https://en.wikipedia.org/wiki/Gravity_separation#Sinking_chamber

if you make prepare chocolate milk and leave it for a while, you also get sedimentation. (in commercial chocolate milk they put in carrageenan to prevent this). This layering or stratification is also called separation. so you get the idea.

https://en.wikipedia.org/wiki/Chocolate_milk

Location location location

So now you understand why Antarctica is ideal. it is very cold, so the gas molecules will not move much (like we're in a big freezer), and we have two other clean building blocks there: lots of ice and wind (the strongest winds in the world).

Tunnel vision

So what I need you to picture in your mind is a tunnel. The tunnel can be build in two ways, either

like a very long igluu, like in Harbin Ice Festival they carve blocks from ice and build; Or it can be carved in the existing ice below our feet.

In ancient times people carved rock so in modern times we can carve ice which is softer than rock

you can see here:

https://en.wikipedia.org/wiki/Sepphoris

in this picture:

https://en.wikipedia.org/wiki/Sepphoris#/media/File:%D7%A6%D7%99%D7%A4%D7%95%D7%A8%D7%99-_%D7%9E%D7%A2%D7%A8%D7%9B%D7%AA_%D7%94%D7%9E%D7%99%D7%9D.jpg

You can also combine the methods, dig half as deep, use the ice for blocks and build the other half above.

It's important for me to mention these very cheap and low tech ways to make a tunnel, because when you say tunnel people imagine borrowing through a rocky mountain with huge expansive machines, and here it's the opposite.

Blowing in the wind

So we start with a tunnel 1 kilometer long, a few meters tall and about 1 meter wide (narrow). The reason is that we need a column of air so that the heavier CO2 will sink to the bottom.

It's important that the tunnel is along the direction of the stong winds in that spot. Just like in your home you know which direction each year the strongest winds come from.

Since we decide what direction we make the tunnel, so we make it along the direction where it can be ventilated by the wind. Any time we open the doors in both ends of the tunnel the wind pushes new air into the tunnel which pushes the old air in the tunnel to the outside.

Tunnel's "basement" trap door

That was the big overview of the tunnel. The finer details are that each tunnel is made of two tunnels that are connected along the tunnel with holes (let's say every 100 meters), Just like in the street when we walk on a manhole cover (again not new technology, they had this in ancient rome) it's really a "door" separating the upper street from the lower sewerage channel below you.

https://en.wikipedia.org/wiki/Manhole_cover

We can tie a rope to each door which we can pull from the surface (the hole passes through a small hole in the ice ceiling of the tunnel) like a trapdoor. So we can let the trapdoor be open for a few days, and once the CO2 drained down to the "basement" we can close the trapdoor and so now the lower tunnel is full of CO2.

https://en.wikipedia.org/wiki/Trapdoor

Lichen wall forest

We know lichen from our building that grows on the walls, but it is also very important because it has cyanobacteria which made all the oxygen on Earth in the first place.

The door at the end of the tunnel is actually two doors. The upper tunnel opens to the outside so we can throw the air without CO2 back to the atomosphere.

The lower tunnel opens to another tunnel that we prepared where we have lots of lichen along very long walls. Lichen is very tough and it can survive antarctica (and even space) but it needs light in order to convert CO2 into O2.

So this new tunnel is not like our previous tunnel where we wanted an opaque ceiling, because otherwise the sun would heat and turbulent the air; Here in the lichen tunnel we want transparent ceiling in order for the lichen to be able to photosynthesize the CO2 into O2.

Making clear ice is possible and they do it in every restaurant, we just need to make the same thing on a large scale.

https://www.wikihow.com/Make-Clear-Ice

So in the lichen tunnel we have like a radiator

https://en.wikipedia.org/wiki/Radiator

structure of thin walls, to maximize the surface area, which for us means walls from ice blcoks. But the walls need to be along the direction of the tunnel (preferably long long walls) so they don't block the flow of the gas through the tunnel.

So now we close the lichen tunnel, and the lichen works on the CO2 for a few days and turns it into O2. then when the next batch of CO2 arrives in, it pushes the already made O2 outside to the atmosphere, out from the far end of the lichen tunnel.

Improvement I

Between the tunnels we can use tunnel ventilation "pipes" like you see here.

Mining ventilation - How It's Made

https://www.youtube.com/watch?v=vgQEj5Ah5p0

Also instead of digging 2 tunnels for the sinking process: upper and lower, we can dig only 1 tunnel and put 2 such "pipes" one over the other which is easier (but not as friendly to the environment).

Improvement II

The ratio of sinking tunnels / lichen tunnels doesn't have to be 1 / 1 . If we see that one of them takes a longer time than the other, we can connect more tunnels from the slow kind to each one tunnel of the fast kind.

Improvement III

Antarctica also has very big under-ice canyons, like as deep as one third of Everest, so we can carve in (we don't need to build just remove, like in Lalibella or Elora) tunnels one on top of another. This means we need to take care of light

the light comes from bundles of optical fibers that we lay along the tunnel, that bring concentrated light (which we gather like in a solar farm with mirrors pointing to one spot) and then distribute along the tunnels.

Improvement IV

In the future, in order to make lots of tunnels close to the surface, maybe we can make use a laser from space, like collecting solar energy in space and then beaming it down, like in this Russian project:

https://en.wikipedia.org/wiki/Znamya_(satellite)

Conclusion

I know Elon Musk gives 100,000,000 dollars for such a solution:

https://www.xprize.org/prizes/elonmusk

but I don't want money, I just want someone like Elon to help me bring to fruition some of the other ideas in my website, which are all free ideas for saving mankind. thank you!

http://www.strulovitz.org/

Chapter 8 – Wildfire Spark Drainage

extinguish wildfire using aluminium foil curtain with spark arrestor chimney and fire cloud earthing harpoon

Wildfire Spark Drainage

problem outline

in the interesting documentary:

Megafires Engulfing Forests and Cities

by NHK from 2020

https://docuwiki.net/index.php?title=Megafires:_Engulfing_Forests_and_Cities

3 experts explain 3 spreading mechanisms of wildfires: "chimney effect", "fire tornado", and "fire cloud".

https://en.wikipedia.org/wiki/Wildfire#Physical_properties

so my proposed solution tries to countermeasure all 3.

solution outline

"corral": honeycomb-shaped firebreak with telescopic flagpoles

"fire screen": aluminium foil raised like sail

"chimney": funnel to ducted fan with spark arrestor, diagonally rise branches and disperses

"lightning rod": fire cloud earthing using mortar that shoots a harpoon with copper wire rope

problem in detail

the experts from
Missoula Fire Sciences Laboratory, Montana, USA,
and from
University of Alberta, Canada,
explain 3 problems:

problem #1 - thermal columns

cool air coming down flattening and pushing forward and spreading the flames

https://en.wikipedia.org/wiki/Stack_effect

explained by research forester Mark Finney (min 17:25)

problem #2 - fire whirls (tornado-like flames)
https://en.wikipedia.org/wiki/Fire_whirl

explained by research mechanical engineer Sara McAllister (min 19:00)

problem #3 - pyrocumulonimbus cloud

(soot cloud that can cross a river and ignite trees by lightning)

https://en.wikipedia.org/wiki/Cumulonimbus_flammagenitus

explained by professor of wildland fire Mike Flannigan (min 20:50)

solution in detail

"corral"

the first thing to do is to divide the whole forest into hexagon patches (with side length of maybe 1 kilometer), and on the outer lines of the exagons to cut down the trees like firebreak

https://en.wikipedia.org/wiki/Firebreak

so from a bird's eye view from above we see the gaps in the trees look like honeycomb structure.

in this way we can isolate and sacrifice the hexagon (a terrain compartment) where the fire started, but save the rest of the hexagons. i will call the hexagons "cells" like in a honeycomb.

along the borders of the cells we prepare in advance telescopic flagpoles (a little higher than the tree tops), evenly spaced like maybe every 25 meters. the poles are normally extended, they are just telescopic for maintenance purpuses.

https://en.wikipedia.org/wiki/Flag#Flagpoles

"fire screen"

on which instead of flags we raise the "curtains pole" (which is a steel wire) on which the "curtain" of aluminium foil sheet is hanging.

this partition between two neighboring cells should be prepared in advance and operate by remote control from the control center as soon as cctv/drone/satellite locates a fire.

we can install a pulley and a counterweight that drops (released by a small actuator) and the weight is tied to a rope that raises the "curtain pole" as the weight falls down to the ground.

the "curtain" itself can be stored folded inside a protected "groove", like we have grooves in the walls of the house for electric cables and protected in plastic tubing.

so again, when the signal from the control center arrives, then the counterweight from the top of the flag pole is realeased and falls to the ground, pulling open the tubing and raising (unfolding) the aluminium sheet (like that in the kitchen but double the thickness and a LOT bigger in area).

and this happens in every section along the outer border of the cell in which a fire was detected.

the aluminium foil is light strong and reflects heat, and is resistant to fire, for example this is how you cook potatos in a camp-fire

https://en.wikipedia.org/wiki/Outdoor_cooking#Other_covered_techniques

the "corral" which is made up of "fire screen"s protects from burning embers that fly in the wind.

once this "corral" is deployed, the firefighters have about half an hour to get there with the next part of the solution which is the "chimney".

"chimney"

the "chimney" is basically a long hollow metal pipe, the firemen put the entrance end of this big pipe in the corner of the hexagon (cell) towards which the wind is blowing the strongest.

the exit end of this big pipe is high in the air at safe distance above the tree tops. so the exit end is supported by telescopic supporting beams, or if this can't be done then on a large ladder. anyway the supporting thing should be made from light and strong aluminium because it's needs to get the location using a helicopter.

the "chimney" takes in air from the burning cell which means smoke with firebrands (hot wood embers) and other burning materials which can start new fire spots,

and then the "chimney" puts out hot air that without any burning materials.

this is done by a centrifugal spark arrester

https://en.wikipedia.org/wiki/Spark_arrestor

roll the "barrel"

the "barrel" is what i call the active part of the chimney, it contains both ducted fan (which are just static metal blades, that rotate when the "barrel" rotates; and the spark arrestor which is also just static metal blades only designed so that there's space at the center of the barrel.

between the fan and the spark arrestor the inside of the barrel should get narrower towards the center.

the whole "barrel" needs to be rotated from the outside, so it should be close to the ground, which means close to the entrance hatch of the "chimney".

i think it's easiest if that part lies horizontal on a special conveyor belt. the belt is small and needs to be able to survive the high heat.

so maybe we can use high-temperature mineral wool

https://en.wikipedia.org/wiki/Mineral_wool#HTMW

in order to take in the air the "chimney" needs to intially use the (heat resistant) fan, but soon afterwards the "suction" of the "chimeny" suck in the air by itself like a real chimney.

maybe we can at that point use the energy of the hot air rising in the chimney for the conveyor belt (if it's run by electricity). this is much prefered to start with a battery and then produce your own electricity, because bringing a small diesel fuel engine for this, will require a close by tank filled with flammable fuel, which is dangerous.

(the conveyor belt is there because we don't want the heat from the "barrel" to get by conduction to the engines and ruin them)

in order for the batteries not to explode, their electrodes far away from each other, and not over charged (about cold temperature we don't need to worry).

Why do batteries explode? (BBC Science Focus Magazine)

https://www.sciencefocus.com/science/why-do-batteries-explode/

last but not least, i wish to explain that the chimney is NOT going straight up, because if it's going straight up it might cause problems #1 "chimney effect" and #2 "fire tornado"!

that's why the chimney needs to be diagonal (so the entrance is on the ground level, but the exit is much higher, and also the exit hatch should branch out, like maybe 3 exit hatches:

all of them pointing sideways, parallel to the ground, high above the tree tops like maybe twice as high,

pointing away from the burning cell, but in 3 different directions, like if the burning cell is in the south, then we want one exit nozzle pointing to the north another to the north-west and another to the north-east.

so the order of operations is first lay out the turned-off conveyor belt with its engines next to the "curtain" at the point where the wind already wants to break the "curtain"; then put the barrel; then set up and erect the rest of the chimney in 45 degrees angle upwards and connect it to the barrel (the joints should be high-temperature mineral wool too); and then turn-on the "barrel"; the suction of the fan makes a hole in the curtain which now acts as a funnel.

OK. but what if the moisture released from the trees by the fire, along with the soot create a "fire cloud" that can even cross a river and ignite by lightning new fire spots? then we need the last part of the solution:

"lightning rod"

a normal lightning rod is passive, it waits for the lightning to come to it. here we are active, like the famous kite experiment by Benjamin Franklin

https://en.wikipedia.org/wiki/Kite_experiment

instead we are shooting a harpoon like this one (notice the rope tied to the harpoon)

https://en.wikipedia.org/wiki/Harpoon

(of course what we are shooting is small and not pointy so that if it falls to the ground it wouldn't kill anybody!)

from a mortar weapon like this one:

https://en.wikipedia.org/wiki/M224_mortar

(but of course our "shell" is not explosive, just something to tie our "rope" to)

the important difference is that instead of a rope we have a copper wire, like in the Exploding Wire Method to create plasma:

https://en.wikipedia.org/wiki/Exploding_wire_method

so here the fireman that operates the mortar needs to be in a safe distance, like i guess at least 15 meters, and everyone should lie on the ground.

i know usually the operator of the mortar is ducking next to the mortar, but for this usage someone needs to make a remote control "vice" device that can open by radio signal (not infra-red) because we need the operator to be in a safe distance.

in order not to ruin the mortar each time, the operator anchors one side of the "rope" to the ground by tying it to a peg that he hammered into the ground, far away from trees. in that way once the mortar has fired the projectile, the mortar is not connected to the "rope" anymore.

then he aims the mortar towards the cloud, i think a mortar can reach an altitude of about 1.5 kilometers. it can be calculated from a parabula equation with the input of the horizontal range of the mortar (3.5 Kilometers) somehow taken into account, i'm embarassed to say that i once knew how to calculate this, but i no longer remember lol!

here is what a normal lightning looks like:

https://en.wikipedia.org/wiki/Lightning#Distribution_and_frequency

Lightning is usually produced by cumulonimbus clouds, which have bases that are typically 1–2 km (0.62–1.24 mi) above the ground and tops up to 15 km (9.3 mi) in height.

so here the cloud is made of soot and smoke etc, but i hope it's lower part is in similar altitude. in any case, just like in an empty field the lightning "wants" to hit the man standing because it's the highest conductor, so even if we don't quite reach up to the cloud itself, we will be the highest conductor.

so the mortar itself should also be protected like 5 meters from the peg in the ground to which the "rope" is tied, in order to save the mortar in case we missed, for taking another shot. each successful shot drains some of the energy from the cloud to a safe place without trees.

i think it's best if the copper wire is actually threaded into a real rope, because otherwise the sudden pull from the projectile will tear the "rope" under its own weight.

Chapter 9 – Goldfinger Amazon Sanctum

saving the Amazon rainforest from logging and farming by scattering radio active waste

Goldfinger Amazon Sanctum

In the best James Bond film Goldfinger, the bad guy wants to make Fort Knox gold radioactive so that no one can touch it. This is the basis of my idea (only without a bomb).

today it's already clear that the Brazilian government (pushed by international companies) doesn't intend to leave the Amazon rain-forest in peace until they will cut down the last tree standing.

the Amazon rain-forest is NOT the property of the Brazilian government.

It's like in Israel we have in Jerusalem the Dome of the Rock. We Israelis have it in our territory, but we cannot decide suddenly to ruin it, because it belongs to the whole Muslim world. If Israel will ruin it, this will start World War III.

So in the same way the green lungs of the planet (literally gives us the oxygen we now breath!) are not the private property of the Brazilian government to slash and burn. The governments of the super-powers can use radio-active waste (which they don't know what to do with right now) to protect it for all mankind.

How it works?

First of all a warning must be given to the Brazilian people, both so that the tribal people can be evacuated safely to an urban location, and to arrange accommodation for them in advance. Something similar had been done when Israel came out of the Gaza strip, the settlers (here it's a lot less people, a few tribes) got compensation from the small state of Israel (here it's a lot bigger budget, the super-powers and also global humanitarian organizations).

So next we try to rescue as many animals as possible by dropping (from airplanes or missiles, no need for the consent of Brazil's government) devices that make loud noise in the areas where we're about to drop the nuclear waste later in the same way.

We saw from Chernobyl that nature is resilient and the animals return to the forest and function normally there (but now are protected from humans for decades).

So what we do is we don't contaminate the whole area at once, but similar to the crisscross pattern of a chess board, for example, scare off the animals out of the dark colored squares and into the light colored squares, and then contaminate the dark squares, and after a year scare off the animals from the light colored squares to the dark colored squares and contaminate the light squares. And after a while the animals will disperse randomly and occupy the whole area.

A special care needs to be taken not to contaminate close to the Amazon river itself (although there are flood plains) because people downstream use if for drinking etc.

As it is right now, Brazil already has a big problem with water being contaminated, so the world needs to help Brazil get compensation for the lost water in the form of fresh water from Iguazu Falls which are also in Brazil's border but more to the south. As far as I understand they are not feeding on the Amazon river in any way.

about hurting the animals, a similar reasoning is working successfully in sawing off the ivory tasks of elephants in Africa (so that poachers won't kill them), so it's similar, we hurt them in the short term for the survival of their species (and in this case ours as well).

The radiation that will be soaked into the trees and animals will also enable to easily track and punish and trade in timber or pets from the Amazon area with a simple Geiger counter. plus of course it will sharply lower the desire of people around the world to buy contaminated meat from cattle in ranches in the Amazon, because it will be contaminated with radioactivity and no one likes cancer in their burgers.

what about the possible danger of some rogue country will try to collect the waste to build a "dirty bomb"? this is prevented by breaking down mechanically the radio-active waste into small chunks before it's deployed, if possible even grinding it into dust. then hacking their way through dense forest is not feasible anymore.

ANY KIND OF DAMAGE SHOULD BE WEIGHED AGAINST THE ALTERNATIVE - WHEN THE AMAZON RAINFOREST ECO-SYSTEM WILL COLLAPSE SOON (E.G.: LACK OF HUMIDITY) - ALL MANKIND WILL SUFFOCATE TO DEATH!

Chapter 10 – Anti Missiles and Anti Tunnels

protecting Israel from Iranian nuclear missiles and from Palestinian terror tunnels using swarms of autonomous drones that are networked together (yes i see the irony)

Anti Missiles and Anti Tunnels

these are two similar solutions for two different problems that my country Israel is facing from Iran (cruise and ballistic missiles) and terrorist organizations (attack tunnels).

they both start by gathering information from many cheap expandable sensors that "talk" to each other like a network, and make decisions on their own in the field.

P.S. obviously drones can reach a few hundred meters, but if you connect them to hydrogen or helium balloons the drones can reach a few kilometers altitude. i relied on this a lot in previous inventions of mine, so i forgot to mention it here, sorry.

problem I - missiles

ballistic missiles (fly up then high then down fast)

cruise missiles (fly low at constant speed)

I assume normal radar has a problem to locate these missiles (ballistic are too fast, and cruise are too low), so my system listens for the sound and sees the trailing heat which no missile can mask.

so my system starts with a swarm of small drones (multi-rotor or multi-copter)

each drone in my system has audio sensors and IR sensors.

as a side note my solution is much more robust against a previous EMP (electromagnetic pulse) because it takes place above Jordan for example, and the little drones' bodies can act as Faraday cage, unlike the huge laser which has "open" parts, sort of like a big telescope.

but as a side note I point out that my first thought was towards laser, but helped by drones which are shaped like a star polygon. the most known example is the pentagram, but you can do the same with many vertices. the drones will be places in the sky in the vertices (sharp points) of the star.

https://en.wikipedia.org/wiki/Star_polygon

the first powerful beam shoots from the ground and all the drones carry mirrors that only reflect the beam between themselves and then back to the ground to recycle some of the energy.

the idea is simple like it's easier to catch a fish with a fishing net (laser star) than with a harpoon (one laser).

if we have enough drones we can even imitate a fish trap further, by making two circles of drones above each other (in the direction that the missile is coming) and criss-cross the laser beam around like in a string hyperboloid (you probably have seen this in a science museum).

https://en.wikipedia.org/wiki/Hyperboloid

https://www.reddit.com/r/oddlysatisfying/comments/8w3y4e/string_hyperboloid/

instead of a string (yarn) we have the laser beam, and the middle empty space is closed completely.

but what if the missile itself is reflective and isn't damaged by the lasers?

that's why i moved to another method which i think is better because it has more redundancy (backup if something fails) and it happens far away, giving us more distance from the danger.

the drones are programmed to talk with each other and so calculate where the missile will be next and tell the drones in front of the missile to get ready.

So the drones that are far away from us act together as one big radar that cannot be fooled by the usual tricks of missiles. including things like MIRV, these will just be handled as more missiles automatically.

the drones that are closer to the place that we want to protect have also an attack system which is made of two parts.

The first part is the passive part which is basically a cloud of C4 plastic explosive drops.

https://en.wikipedia.org/wiki/Plastic_explosive

C4 is very stable and doesn't trigger from the impact with the fast moving and hot by friction missile. it only detonates when you apply electric current inside it.

if in experiments we see that it's the explosive is too sensitive we can

decrease the amount of RDX and increase the amount of plasticizer.

we can even mix the plasticizer with epoxy resin to make it stick more to the missile

https://en.wikipedia.org/wiki/Epoxy

the problem of how to make a spray from something sticky is solved by the epoxy and the hardener sprayed from separate tanks on the drone.

each cloud works like when you drive your car fast through a cloud of insects, they just smear all over the front window of the car.

So here it's like a local rain cloud full of drops, but instead of water drops it's c4 plastic explosive (which is like Plasticine). each drone spreads a cloud into the air directly in front of the missile, just before the missile passes there.

the second part is the active part which is basically a taser like the police use on people, only here the drones use it on the missile.

https://en.wikipedia.org/wiki/Taser

once one of the tasers hit the c4 plastic explosive, it explodes and kills the missile.

in case experiments show that the taser is not practical, after we "sprayed" plastic explosive on the missile, we can "spray" metal shavings (metal chips). some of these will stick into the plastic explosive dough. then we arrange for an artificial local lightning, this is done with drones carrying capacitors that discharge next to the missile, but they don't need to touch it. the missile itself is probably protected as a Faraday cage, but the metal shavings that we planted will conduct, like a person standing too close to a tesla coil.

the drones are working autonomously as a swarm and the calculations are done in hardware, because the drones must operate very fast. here is the speed of the missile of one of the missiles:

2.4 km/s at altitude of 10–30 km in final stage which is about mach 7.

https://en.wikipedia.org/wiki/Shahab-3

problem 2 - tunnels

i was only made aware of this yesterday when i watched a television show by Ilana Dayan who is a Investigating journalist here in Israel.

i heard that in the 2021 Israel–Palestine crisis,

Israel tried to bomb "the metro" in Gaza which is Hamas' extensive underground tunnel network, but the intelligence didn't know where the tunnels are.

so they guessed like with intersecting lines perpendicular (90 degrees) to a known tunnel, basically they were wasting crucial expansive bombs blindely.

this was said by a general who was the commander of the air force.

so i though there must be something more sensible that Israel can do to be more accurate.

so as before I'm describing my first idea first, which was to drop sensors instead of bombs:

this is used to map the tunnels just before we need to kill "the metro" if there is war with Gaza.

So it's starts with many projectiles about the size of a tent peg

https://en.wikipedia.org/wiki/Tent_peg#Characteristics_of_tent_pegs

but instead of being with a profile of 90 degrees angle, it's with a profile and of square, and the inside is hollow so that we can put soft cushioning and electronics inside. the spike sharp tip that enters the ground first, is made more heavy (with more metal) because it needs to point downward and to be strong.

so we drop a lot these from an airplane.

the idea of kinetic bombardment (dropping something that has kinetic energy from the gravity but without explosive) is not new

https://en.wikipedia.org/wiki/Kinetic_bombardment

what's new here is that instead of the rods trying to kill they are meant as sensor probes.

from here we have a few options for probing the sand. we can use radar waves, or electric conductivity, or sound vibrations.

you can see for example here:

Guide to building a GPR (Ground Penetrating Radar) for educational use

https://gpradar.eu/onewebmedia/TU1208_GPRforeducationaluse_November2017_FerraraChizhPietrelli.pdf

by Vincenzo Ferrara (Italy), Margarita Chizh (Russia), Andrea Pietrelli (Italy)

you can see here the list of materials (this is the MIT activity that the EU paper is based on), it's about 360 U.S. dollars. a LOT cheaper then a bomb, i'm sure.

https://ocw.mit.edu/courses/res-ll-003-build-a-small-radar-system-capable-of-sensing-range-doppler-and-synthetic-aperture-radar-imaging-january-iap-2011/resources/mitres_ll_003iap11_proj_in/

So at the first seconds after they fall, all these rods connect with each other, calculate where they are exactly (triangulate and average out GPS errors) and collect their findings about the ground and send them encrypted wirelessly to the headquarters. all of them need to have short range communications, but only a small percentage of them need to have long range communications. they act as a network between themselves and one of them act as a link to the outside (to Israel).

what about the maximum depth that you can see?

https://en.wikipedia.org/wiki/Ground-penetrating_radar

Dry sandy soils or massive dry materials such as granite, limestone, and concrete tend to be resistive rather than conductive, and the depth of penetration could be up to 15 meters.

but there is a problem, the tunnels themselves are deeper than that, although the ends (entry and exit) must come to the surface)

https://en.wikipedia.org/wiki/Palestinian_tunnel_warfare_in_the_Gaza_Strip

Hamas used electric or pneumatic jackhammers for digging tunnels. Tunnels were dug 18–25 meters underground at the rate of 4–5 meters a day.

during the tunnel construction the hammers make noise that more sensors can listen to, but what about a tunnel that's already finished?

so then it occurred to me that we are approaching this in the wrong way.

when i was a child my father asked me which movie I'd like to see in the cinema, I was into ninjas and had a ninja poster in my room, so I chose The Super Ninja (1984 film) and my father watched it with me in Armon cinema in Haifa.

in the movie there are the five Chinese elements, and each bad ninja has an element. the Earth element ninja can dig tunnels through the ground. So at one point (in minute 1:16:43) the hero also digs tunnels through the ground, and from this point the underground surprise element stops being an advantage of for the bad guys, and from then on, the battle returns to be above ground.

Wu Tang Collection - Super Ninja (Widescreen)

Wu Tang Collection

https://www.youtube.com/watch?v=2pJteYIJi5g

so basically this is what we do here to the Palestinians: two can play this game, you want to play in the dirt? we can too.

so there is an article about how to build a ground digging drone like a talpa (mole). although the robot in the article is inspired by other living things, such as how plant roots are growing, how an octopus burrows in the sand, and a sand-fish lizard digs.

This Snake-Like Robot, Inspired By Plants, Can Burrow Through Sand And Soil

It's not a high-tech robot and is made of airtight, ripstop nylon fabric.

by Gadgets 360 Newsdesk

https://gadgets360.com/science/news/robot-borrowing-sand-snake-plant-inspired-university-of-california-santa-barbara-georgia-institute-of-technology-2494869

and also please look in this Youtube video from the Mechanical Engineering lab of University of California, Santa Barbara:

Robotic burrowing with tip extension and granular fluidization

by UCSB Hawkes Lab

https://www.youtube.com/watch?v=v1nmNDtqs4Q

thank you to News Atlas for the video

https://newatlas.com/robotics/tunneling-snake-robot/

the scientific paper is from Science Robotics and was published in 2021:

Controlling subterranean forces enables a fast, steerable, burrowing soft robot

by Nicholas D. Naclerio, Andras Karsai , Mason Murray-Cooper , Yasemin Ozkan-Aydin , Enes Aydin, Daniel I. Goldman and Elliot W. Hawkes .

https://www.science.org/doi/10.1126/scirobotics.abe2922

(i can't find it on sci-hub but you can find it on google)

so i suggest we should dig tunnels of our own (without risking our soldiers) using such underground drones. these tunnels can be much more narrow, because they are not meant for people. this gives us a big advantage in speed and stability of the digging. inside our tunnels we will have two kinds of robots,

the first is the digging robots as the article describes,

the second is the maintenance and relay station (radio repeater) robots,

these second robots are bringing energy to the first robots and take out the byproducts like dirt.

the second robots also enable us to communicate by radio with the first robots, and to see what they see remotely with their sensors.

basically the whole thing will look like a 3d version of the game digger

https://en.wikipedia.org/wiki/Digger_(video_game)

the small bulldozer in the game is the borrowing robots in reality,

and the monsters in the game will be the maintenance and radio repeater robots in reality.

the bags of gold that can drop and kill if you dig below them are obstacles that we should avoid in reality such as rocks.

Of course after mapping the area we can also plant bombs underground close to the arab tunnels to collapse them, but i suggest to save this to the war as a surprise.

Chapter 11 – Everest Limestone Mass Driver

protecting our food chain (ocean acidification) and coral reefs (coral bleaching) by trapping the CO2 and transporting it cheaply to planet Venus

Everest Limestone Mass Driver

This is a solution for the ocean acidification

https://en.wikipedia.org/wiki/Ocean_acidification

this is not just about beautiful coral reefs, this is about the smallest creatures plankton can't build their shells because they don't have calcium carbonate, so they die, and then the whole food chain, including humans STARVE TO DEATH (for example our cattle eats minced fish) !

The naive solution

the easy but deadly solution is to make neutralization of the acid with the base that we prepare here on EARTH (that's the deadly part).

we have carbonic acid H2CO3 in the water (that's the problem that's created from all our CO2)

https://en.wikipedia.org/wiki/Carbonic_acid

we take the base which is limewater Ca(OH)2

https://en.wikipedia.org/wiki/Limewater

which is a diluted watery solution of slaked lime

https://en.wikipedia.org/wiki/Calcium_hydroxide

which in turn is made from mixing water with quicklime

https://en.wikipedia.org/wiki/Calcium_oxide

So our naive approach would be: let's make a lot of quicklime here on EARTH because it's cheap!

But this is very bad because of how it's made:

they take limestone rock and heat it to above 825 °C

and then all the CO2 comes out of the rock which they throw into EARTH's atmosphere (that's the deadly part), and what's left is quicklime.

So in this naive method we add CO2 to EARTH'S atmosphere which is what caused the problem in the first place, so we are aggravating the original problem!

the sophisticated solution

overview

(1) do the naive method but catch the CO2 right when it's produced.

(2) compress CO2 with very little energy

(3) shoot it in a capsule to outer space with very little energy

(4) send it to a loop around planet Venus

(5) release the CO2 into VENUS' atmosphere

(6) capsule does slingshot and comes back to Earth

(7) collect the empty capsule and repeat process

ok so now i will break down and explain each step:

(1) naive and catch CO2

my example will be the great barrier reef in Australia. the limestone will be quarried in Australia (maybe Limestone Coast), Australia is the hottest continent, so we take the rocks to the desert in Western Australia, were we concentrate the Sun rays with mirrors like a crude reflecting telescope, only instead of never look into the Sun rule, this telescope does, and the "viewer" is the chamber with the rock (it's like burning with a magnifying glass only on big scale) to get to the required heat - above 825 °C in a metal chamber that is connected with tubes to rubber balloons. Once the balloons are filled we seal them so that the CO2 gas doesn't escape.

The quicklime rocks are transferred back to the south side of Australia, where they are treated in sea water. This is done because that's a very exothermic reaction ("Greek fire") and gets over 150 degrees Celsius. If we do this near the reef the oxygen will not melt in the water and the reef will die.

Now we transfer the slaked lime to where it's needed - the great barrier reef and save the reef.

the next steps are talking about how to get rid of the CO2 in an environmentally friendly way FOR EARTH.

(2) compress and cool the balloons

the balloons eventually need to get to planet Venus, but in order to shoot them into space we need them to be a lot smaller. This means we need the gas CO2 inside to become dry ice (liquid CO2). So we need cold temperature and a lot of pressure.

the balloons need to be compressed and cooled, so we do this with the technique that i described in my "abyss elevator" for cheap desalination of sea water invention. Which means we use the fact that the pressure of the sea water increases greatly as you dive down to greater depth. This time we don't even need a hollow shaft like the elevator. We just need a long vertical rail that goes deep down, it can be located in the Mariana Trench which is the deepest point of the ocean.

https://en.wikipedia.org/wiki/Mariana_Trench

So we drag the balloons behind ships until they reach the vertical railway that we built there. The railway doesn't have to reach the bottom, it can be connected to a big floating rig. The way we drag these floating balloons to the abyss is with two cogwheels that are attached to the railway, like you can see here:

Rack railway --> Locher Rack system

(also called rack-and-pinion railway, cog railway, or cogwheel railway)

https://en.wikipedia.org/wiki/Rack_railway#Locher_(1889)

Another thing that we drag down is the hard capsule (the bullet) that the mass driver will shoot into space, which is made of aluminum coil

Mass driver --> Fixed mass drivers

https://en.wikipedia.org/wiki/Mass_driver#Fixed_mass_drivers

Inside the coil encapsulated is the capsule itself, like a thin shell that protects the rubber balloons. So anyway we are sinking both a few balloons and this whole capsule into the depth of the abyss, and down there a robot is releasing the solid dry ice into the capsule and shuts close the capsule. Then we bring back to the water surface the empty torn balloons for recycling and also of course the capsule which is now filled with compressed CO2, and ready to be launched.

(3) How do we shoot the capsule into outer space?

Our big advantage is that the CO2 capsule is NOT like a spaceship with people, so we can apply big accelerations without killing the passengers, because there are no passengers.

https://en.wikipedia.org/wiki/Mass_driver#On_Earth

Wikipedia says someone calculated that for such cargo we can build a mass driver that can have enough escape velocity to escape the whole Solar System (with a cargo of nuclear waste), so we only need to escape Earth and reach Venus.

OK. so what we do now is build the biggest mass driver (electromagnetic catapult) EVER inside the EVEREST.

https://en.wikipedia.org/wiki/Mass_driver

the idea isn't as strange as it might sound at first, because the Chinese already want to dig a tunnel through the Everest mountain to Nepal. So it's technically possible.

In 2019 there was an article in the Nepali Times by Ramesh Bhushal that said:

https://www.nepalitimes.com/banner/which-way-will-the-tibet-nepal-railway-go/

Which way will the Tibet-Nepal railway go?

Feasibility report suggests drilling a train tunnel under the Himalaya, not along the river

you can see the short interview with the engineer from 2019 here:

Tibet-Nepal railway: An engineer's perspective

NT brief

https://www.youtube.com/watch?v=2bCrriCNMqo

in the video he says that "it is possible to do but it will cost a lot. under normal circumstances it would cost 7-8 million U.S. dollars per km.

but for us it would be five times that amount."

OK. so let's multiply by 5 and we get 35-40 million dollars.

the height of Everest is about 9 kilometers, so if we multiply by the cost per kilometer it would be 315 to 360 million dollars.

if this sounds like a lot of money, think of the military budget of the United States:

https://en.wikipedia.org/wiki/Military_budget_of_the_United_States

"the fiscal year 2023 presidential budget request of $773 billion"

by the way this is about 3 times more than the next country which is China.

with this much money the U.S.A. alone can build this tunnel more than 2000 times!

will it not be better if instead of killing each other we will invest a little bit to saving everybody's lives?

South Base Camp is in Nepal at an altitude of 5,364 meters

https://en.wikipedia.org/wiki/Everest_base_camps

this is like a small village and can be our base of operations for the whole project.

OK. so in another article in the Nepali Times this time from 2021 we see that the project stops basically because it will not earn enough money for the Chinese. but here the international community will finance this, so i'm just quoting the other problems:

"Chinese engineers found the gradient from the Tibetan Plateau to the low valleys in Nepal to be too great, and there was also the need to avoid building a railway inside Nepal’s protected areas in Langtang, Rolwaling and Mt Everest regions."

again, this is irrelevant for us in this project. it's too steep for a train, but we are building something completely different, in which the whole point is to reach vertical slope. and about the nature or religion protection of the mountain, we need to compensate the Nepali people, but we have to save Earth. this is crucial to the entire humanity.

at the top of the mountain where it will be hardest to drill, because this is called the death zone

https://en.wikipedia.org/wiki/Death_zone

which is about 8 kilometers altitude.

here we can do the opposite and instead of drilling from below, we can use robots to direct acid to melt the stone from above downwards. it will be like a well that digs itself, as long as we pump a fresh stream of acid.

this acids are very dangerous see here in the safety section about the strongest acid

Fluoroantimonic acid

https://en.wikipedia.org/wiki/Fluoroantimonic_acid

Fluoroantimonic acid is a mixture of hydrogen fluoride and antimony pentafluoride, containing various cations and anions (the simplest being H_2F^+ and SbF^-_6).

This substance is a super-acid that can be in excess of a quadrillion times stronger than 100% pure sulfuric acid, depending on the proportion of its ingredients. ...

Extreme care must be taken when handling fluoroantimonic acid. It is exceptionally corrosive, but can be stored in containers lined with PTFE (Teflon).

OK so robots carry Teflon coated tanks of this dangerous material, in the same route that humans climb the Everest, except for the robots it's easier because they are electric and don't need oxygen.

Then the robots scrape clean of ice the peak and after that the robots deploy a tent made of stretchable (flexible) fabric that contains Teflon.

we had such fabric in the 1960's, here in Wikipedia in

Polytetrafluoroethylene (PTFE)

https://en.wikipedia.org/wiki/Polytetrafluoroethylene

you can see an advertisement from LIFE magazine of Zepel, the trade name used to market Teflon as a fabric treatment by Dupont Corporation. the advertisement says: "even if it rains pea soup".

https://en.wikipedia.org/wiki/Polytetrafluoroethylene#/media/File:1963_Zepel_advertisement.jpg

by the way, today the most known PTFE is Teflon which is made by Chemours which is a a spin-off from DuPont.

imagine the tent like a big condom that protects against a sudden burst of sperm from inside to the outside, and against the vaginal liquids from the outside to the inside.

in this case the sperm is burst of acid and rock and heat when the acid gets in touch with moisture. this is why we first need to suck all the air out of the tent/condom before we put acid in the middle of it.

the vaginal liquids are moisture from the winds outside (water clouds). this is why the tent/condom needs to be anchored to the ground at the peak, around the hole that we are digging.

the only things coming in and out of the tent/condom are two Teflon plated "straws" (today we use PTFE for the coating on catheters so the bacteria cannot stick to them, so it's similar).

one "straw" will drip in fresh new acid, and another "straw" will suck out old used acid, and again store it in a Teflon coated tank that is taken down in the same way that it was carried up.

when the depth of the hole doesn't allow the sucking straw to operate anymore, we need to suck out the dangerous fumes (again into tanks) and then re-deploy the tent/condom on a lower level.

the sides of the hole will look like the barrel of a gun, with spiral niche that the robots will carve for themselves, which will function like a spiral stairs

https://en.wikipedia.org/wiki/Stairs#Spiral_and_helical_stairs

for example see this picture in the 'Bramante' staircase in the Vatican museums, picture thanks to Andreas Tille.

https://en.wikipedia.org/wiki/Stairs#/media/File:VaticanMuseumStaircase.jpg

after the tunnel from above and the tunnel from below are united, starts the expansive part where we need to put powerful electromagnets that are super cooled continuously, the environment is cold, but we need the metal to be super conducting, like the magnets in an MRI machine at the hospital.

basically it will be like building a particle accelerator, only a lot cheaper because the particle accelerator fine tunes very carefully something very small (a few atoms in the micro scale or even nano scale) and here we give a lot of linear force

https://en.wikipedia.org/wiki/Linear_motor

the energy for the capacitors that feed the linear motors' electromagnets need to come through wires.

we can help China build a nuclear power station in Kathmandu Valley

https://en.wikipedia.org/wiki/Kathmandu_Valley

the largest city in the Himalayan hill region, so the benefit for the people there is that they also can get electricity from this station sponsored by the international community.

from the 6 most productive nuclear power plants, half of them are Chinese:

https://en.wikipedia.org/wiki/List_of_nuclear_power_stations#In_service

China benefits from this project that it operates the gate to space for all future projects of any country.

so next to the power plant there will be a transformation station

https://en.wikipedia.org/wiki/Transformer

and there will be another transformation center where the Everest base camp is today.

South Base Camp is in Nepal at an altitude of 5,364 meters

i tried to understand how much money it costs to build a nuclear power station from Wikipedia, the most relevant line is this:

https://en.wikipedia.org/wiki/Economics_of_nuclear_power_plants

so if we look at the Chinese Tianwan

https://en.wikipedia.org/wiki/Tianwan_Nuclear_Power_Plant

which Wikipedia says that:

Tianwan will become the world's largest nuclear power plant with a total generating capacity of about 8,100 MWe

and under details it says:

Both units use VVER pressurized water reactor (PWR) technology supplied from Russia. Together they cost approximately US$3.3 billion.

this is the most pricey part of the power plant but we can estimate the whole power plant will be a few billions, lets say 10 billion U.S. dollars.

compared to how much China spends on weapons this is very small, and it allows China to lead the whole world in space and take a commission each time someone wants to launch something into orbit!

In 2022, the official military budget was announced to be 1.45 trillion yuan (US$230 billion), the second largest in the world behind the US.

https://en.wikipedia.org/wiki/Military_budget_of_China

which brings us to another problem which is the distance from the sea, but let's finish with how much electricity we need first.

the reason I'm comparing to CERN particle accelerator is that they also have strong electromagnets buried in the ground between France and Switzerland, they accelerate something smaller (which is cheaper) but to a higher speed and with higher accuracy (which is more expensive), so it evens out.

https://home.cern/science/engineering/powering-cern

At peak consumption, usually from May to mid-December, CERN uses about 200 megawatts of power, which is about a third of the amount of energy used to feed the nearby city of Geneva in Switzerland.

so i found an article about Tianwan Nuclear Power Plant

the article is by the Swedish company Alfa Laval and was written by Pan Haixia, Gong

A nuclear milestone in China

https://www.alfalaval.com/media/stories/nuclear-power/a-nuclear-milestone-in-china/

The plant provides power mainly to the country’s most developed area, southern Jiangsu, close to Shanghai...

so if we look at the Jiangsu province in Wikipedia it has a population of 84 million people. probably the closer you get to Shanghai the more people there are, so let's say half live in southern Jiangsu which means 42 million people.

Geneva has a population of about 200,000 people (Wikipedia) so a third of Geneva is about 67,000 (sixty seven thousand) people.

so to summarize the Chinese power station we talked about has enough electricity for more than 600 (six hundred) CERN like projects.

ok so now for a not so easy problem which is the distance from the sea. every nuclear power plant is always close to the sea to get the cold water that cool the reactor.

like the Rooppur Nuclear Power Plant is cooled by a river,

The Rooppur Nuclear Power Plant will be a 2.4 GWe nuclear power plant in Bangladesh.

https://en.wikipedia.org/wiki/Rooppur_Nuclear_Power_Plant

we can do the same with the river that passes through Kathmandu valley which is called

Bagmati River

https://en.wikipedia.org/wiki/Bagmati_River

in return for the non polluting heat sink use of this holy river, the international community should help the local community clean the river and keep it clean from the current pollution

https://en.wikipedia.org/wiki/Bagmati_River#Pollution

the distance from Kathmandu to Lukla (where the Nepalese Everest base camp is, the south base camp) is 138 km.

so this distance will be used to accelerate our payload at first.

but how do we bring our payload (the capsule filled with CO2) from the port to Kathmandu?

Koshi Railway

It is used to move containers and other cargo to and from the Kolkata (Calcutta) port and other places in India

https://en.wikipedia.org/wiki/Nepal_Railway_Company_Limited#Koshi_Railway

this reaches Nepal but not Kathmandu, so from there we should use trucks.

NOTE:

the capsule contains compressed CO2 so it's like a bomb. this means it should be driven separately from people, or at least in a safe distance, at the end of a train inside an armored train-car, and then inside an armored truck (like banks use to transfer money).

OK. So the full capsule reached space but now it's left with very little kinetic energy (speed), because it wasted all the energy on escaping Earth. how do we get it all the way to Venus and back?

for this i refer you to one of my previous inventions which performs exactly this function:

Mass Driver Repeater

after the chain of solar powered mass drivers brought the package to Venus, the package releases the CO_2 in Venus orbit and the CO_2 falls to Venus. then we return the empty package back home again with the Mass Driver Repeater. This also balances the chain for the next package.

Note: only the very first package needs to be sent using another method, like rockets, because there is still no returning package to balance the Mass Driver Repeater.

after the empty shell is returned to Earth orbit, we land it with parachutes to the ocean, any ship that passes there can return it to the closest port, by tying it with a rope behind the ship and dragging it behind it, and we give money incentive like when you return a bottle, but of course a lot higher, and then we recycle the shell for another night flight to Venus.

Chapter 12 – Kipi Ben Kipod (a pink and orange giant porcupine muppet) – Orbiting the Sun with reflecting telescopes creating ruby lasers for solar sails

OK so this invention is dedicated to the original Kipi Ben Kipod played by the actress Sarai Tzuriel in Rechov Sumsum (the Israeli version of Sesame Street) children TV show. Thank you Sarai!

https://he.wikipedia.org/wiki/%D7%A7%D7%99%D7%A4%D7%99_%D7%91%D7%9F_%D7%A7%D7%99%D7%A4%D7%95%D7%93

(lately I bought the kind of brown slippers (footware) made famous by Kipi ("Kipi shoes") – if you're European size 44 like me, buy 47!)

OK so we all know about Dyson sphere, surrounding the Sun with solar panels all the light the currently is just wasted in other directions, can be collected and sent to Earth.

https://en.wikipedia.org/wiki/Dyson_sphere

OK so first let's look at this nice (but unfeasible) video:

How to Build a Dyson Sphere - The Ultimate Megastructure

by

Kurzgesagt – In a Nutshell

https://www.youtube.com/watch?v=pP44EPBMb8A

it tells us that it's better to build a swarm of satellites, and still this has problems of:

materials

design

energy

first let's see how they tackle these issues.

First of all each satellite is a mirror, which is arises a few problems of its own:

how do you prevent them from flying off into space (by the push of the solar wind), and if you make a rigid mesh ("bound to some support") that holds them, how do you prevent this whole structure from falling into the Sun on one side and burn (eventually burn completely)? Also how do you prevent the mirrors from blocking each other, let's say Earth is on one side of the Sum, and the

mirror is on the other side of the Sun, but there are also mirrors on the side of the Sun which is close to Earth, and the closer mirrors are blocking the path of the light coming from the far away mirrors. Also let's suppose you DID manage to bring all the light of the Sun to the Earth, you will just make our current problems with global warming much more severe, you will basically boil the Earth. So I don't think the mirrors are a good solution, but I do use mirrors (in a different way) in my own solution, which I think does work.

About the materials, in the video they talk about mining metals from planet Mercury because it's mostly metallic.

There is some interesting discussions about mining metals on Mercury here:

https://www.quora.com/Would-it-make-sense-to-mine-industrialize-the-planet-Mercury-with-AI

https://worldbuilding.stackexchange.com/questions/164141/would-it-make-sense-to-mine-industrialize-the-planet-mercury-with-ai

these are just days apart from each other, so I guess it was asked by the same person, or at least influenced each other (or maybe there was a movie about this on TV? Like "the planets"?)

and here is another one which is older but has the same bottom line:

https://www.reddit.com/r/askscience/comments/lwluu/would_mercury_be_the_perfect_planet_for_mining/

Anyway, the answers for the question of mining on planet Mercury are not encouraging, because there are no water to bring the stuff together over eons so it's easier to mine, and because of the heat on the surface, and because it's easier to take a metallic asteroid and bring it over.

More seriously, in Wikipedia, in the section about Surface geology

https://en.wikipedia.org/wiki/Mercury_(planet)

they say that the crust (where we can perform mining) is made of things without much iron:

"The crust is low in iron but high in sulfur, resulting from the stronger early chemically reducing conditions than is found in the other terrestrial planets. The surface is dominated by iron-poor pyroxene and olivine, as represented by enstatite and forsterite, respectively, along with sodium-rich plagioclase and minerals of mixed magnesium, calcium, and iron-sulfide. The less reflective regions of the crust are high in carbon, most likely in the form of graphite."

So from looking up what are these two materials that dominate the surface (in their form that is iron-poor)

https://en.wikipedia.org/wiki/Pyroxene

https://en.wikipedia.org/wiki/Olivine

I think the only metals we can mine on this planet are aluminium and magnesium, these are light metals that also catch fire, I don't see how they can help us make mirrors that can withstand the heat of being close to the Sun.

As for the energy to do the mining and launching from planet mercury into the orbit of the Sun, the video suggests using solar power which is of course abundant on mercury.

The video talks about solar panels. I doubt that solar panels can work anywhere close to the Sun, because we don't have a heat sink.

The video suggests using a railgun to launch the products (mirrors) into space, which I think is a good idea.

From this point the video suggest using the extra light that the swarm produces, to create more mirror panels and thus more mirrors.

I don't think the bottleneck will be lack of light on mercury, so their description of exponential growth in doubling the production rate of the mirrors is not logical.

OK so what is my alternative solution?

First of all I do support the idea of individual satellites but I suggest that instead of many "stupid" passive satellites, we will make fewer smarter satellites.

Each satellite is balanced hovering above the Sun by the equilibrium between the gravity of the Sun (pulling it towards the Sun) on the one hand, and the Solar wind (pushing it away from the Sun) on the other hand. Since the satellites are not connected to each other, there is no danger that if one drifts too close to the Sun, and falls onto the Sun, they will all get burned; In this scenario we just lose one of the satellites.

Each satellite overall design is like crossover between these two needs: it will look like a huge brass thumbtack,

https://en.wikipedia.org/wiki/Drawing_pin#/media/File:Brass_thumbtack.jpg

where sharp tip is the heaviest part so the whole satellite is always pointing with it's sharp tip towards the sun, and if it accidentally flips it realigns itself by gravity and (solar) wind "aero-dynamics". Think of it like an umbrella where the handle is always towards the Sun. By the way a refracting telescope (which each satellite basically is, only we add laser mechanism and targeting mechanism) basically looks like an umbrella or a brass thumbtack anyway, see for example the

James Web space telescope (without its sun shiels)

https://en.wikipedia.org/wiki/James_Webb_Space_Telescope#/media/File:JWST_spacecraft_model_3.png

So the final deployment is also easy, we shoot the telescope towards the Sun, and it slows down as it gets closer because of the Solar wind, and it stabilizes by itself in the correct distance from the Sun based on the design that we use.

OK so each satellite will be a reflecting telescopes (so we also use mirrors) but right away we concentrate the light and turn it into a laser – using a red ruby gem, this is why the solution is named after Kipi Ben Kipod 😊

The reason for this is that this is the only conversion needed to send the energy directly to a project like

https://en.wikipedia.org/wiki/Breakthrough_Starshot

(the first wave of tiny ships will be used to decelerate and stop the second wave of tiny ships, again using mirrors on the first wave's ships. The second wave's ships will come to a halt, while the first wave's ships will sacrifice themselves, the momentum will pass from the second wave to the first wave's ships. The first wave's ships will be lost in space. Their job is only to help the second wave decelerate and stop on target. I think I already described this somewhere else, but just in case I forgot, I'm laying it out here again.

OK so each time one of our satellites / telescopes will be in the right angle to shoot a ray of laser towards the tiny spaceships, it will move the mirrors so the beam is created. When it's not in the right direction the mirrors are inactive, this gives them time to "rest" (cool off a little) and also this prevents accidents of shooting laser on Earth or other space colonies in the future.

These instructions are hard wired into the telescope so it cannot be hacked by someone malicious and be used as a laser weapon against us.

Okay so another idea that I had is that we build the skeleton of each satellite from silicon nanotubes. Because it seems the element that repeats itself again and again is Silicon

https://en.wikipedia.org/wiki/Enstatite

https://en.wikipedia.org/wiki/Forsterite

https://en.wikipedia.org/wiki/Plagioclase

everything on planet Mercury has Silicon inside it, and a silicon atom has 4 "arms" just like a carbon atom, so just like we make carbon nanotubes:

https://en.wikipedia.org/wiki/Synthesis_of_carbon_nanotubes

we can make instead (it's even easier because the silicon is softer) silicon nanotubes:

https://en.wikipedia.org/wiki/Silicon_nanotube

and just use more and more of them until the structure is strong, and then coat the surface in a thin layer of reflective metal so it becomes a mirror (like we produce a regular mirror which is basically glass coated with a little silver or something).

Chapter 13 – Solar windmills

Okay this is the flipside of the same coin of the previous idea (Kipi Ben Kipod), the Kipi idea uses a "floating" platform with minimum conversion of the solar energy; This idea uses a stationary platform with more lossy conversion (rotating turbines) but it's more "grounded".

The idea of making energy close by from the sun is not new, it's called a Dyson sphere

https://en.wikipedia.org/wiki/Dyson_sphere

When people say this they mean like on Earth, using photovoltaics or concentrating the heat using mirrors, in order to heat water to rotate a steam turbine.

But this doesn't make sense in space, because these mechanisms need a difference between something hot and something cold (heat sink) and where do you get something cold close to the Sun? After it got heated too, what do you do?

So I suggest instead a solution like a wind turbine

https://en.wikipedia.org/wiki/Wind_turbine

only instead of catching the wind it will catch the solar wind, rotate, create electricity, and then transmit this electricity with microwave to where it's needed.

Since the solar wind is travelling very fast the blades should only slightly face the wind, and let most of the pressure flow by to another "fan" that is located further downstream. So basically on the surface of planet Mercury we build a moving platform

Something like the crawler transporter

https://en.wikipedia.org/wiki/Crawler-transporter

of a launch-pad of a rocket (but instead of a rocket we have a "tower" of fans, one on top of the other, each one of them is a turbine that makes electricity from the solar wind that hits the tower from above

https://en.wikipedia.org/wiki/Launch_pad#/media/File:STS-114_rollout.jpg

why do we need this thing moving?

Because we need the cold place (heat sink) close by and this is the shaded part, that keeps moving. So the whole thing is made of two towers that are connected to each other by a massive electric cable. The tower that is in the hot area is the turbines (like a windmill for Solar wind);

The other tower will be like a rectifying antenna working in reverse

https://en.wikipedia.org/wiki/Rectenna

(I'm sorry I don't know how to build this, but I'm sure it's simple for someone with knowledge in electricity)

And from there we broadcast the microwave energy in whatever direction we need it

Space-based solar power

https://en.wikipedia.org/wiki/Space-based_solar_power

I think this transmission from far away to a specific point (like a space colony, or a power plant on Earth or a satellite surrounding such a specific place) also is best done using microwave laser

Maser

https://en.wikipedia.org/wiki/Maser

Which can be made also with Hydrogen

https://en.wikipedia.org/wiki/Hydrogen_maser

which is something that we can produce in plenty from the Solar wind itself (which is mostly made from broken parts of Hydrogen and Helium and these ions “want” to get back together, like electron and proton are attracted etc).

Chapter 14 – Changing resonance bridge

We know that bridges can fall because of resonance:

resonance of people marching on them:

Angers Bridge

https://en.wikipedia.org/wiki/Angers_Bridge

Broughton Suspension Bridge

https://en.wikipedia.org/wiki/Broughton_Suspension_Bridge

And also because of flutter of the wind coming from the side:

Tacoma Narrows Bridge (1940)

https://en.wikipedia.org/wiki/Tacoma_Narrows_Bridge_(1940)

I thought mistakenly this was also because of resonance (this is how it is described in older physics textbooks) but now we know it's because of aeroelastic flutter.

https://en.wikipedia.org/wiki/Aeroelasticity#Flutter

So these are suspension bridges have cables hanging fron FIXED points in the shape of free hanging rope, this is called catenary

https://en.wikipedia.org/wiki/Catenary

When we learn about this shape in calculus of variation the cable is stretched not between two FIXED points but between two pullies. So the rope can become shorter or longer, so it’s FLEXIBLE to changes.

In this way it the cable is like a guitar string that can be made more tense or more loose, depending on the tuning.

In our case the tuning is the weight of the rope that is hanging outside from both sides of the pullies.

So in this way, walking people cannot ruin the bridge by resonance, because then the rope can stretch when necessary, and return to it's original length (between the two pullies) when it can relax again.

But what is instead of hanging a FIXED weight there, we will hang something that responds to wind changes?

Let's say we shape the weights themselves like an empty (always empty) bucket. The heavy metal bucket itself will be tied to the chain/cable, and its weight (even though the bucket is empty always) will be the necessary weight.

But when there is WIND then the bucket will "catch" the wind like a sail of a sailing boat (maybe the bucket needs to shaped like a windsock for that, this needs to be determined by experiments), and then the wind can also stretch the cable, and when there is no wind, or weak wind, the cable can relax again.

Notice as well that the cable is round (in a cross section) so it doesn't flutter like the rectangular "block" that was in the Tacoma bridge. Since we are worried about vortex shedding,

https://en.wikipedia.org/wiki/Vortex_shedding

the circle (cross section) is the shape that is the most protected from that.

So if every section of the bridge is built like that then it doesn't have the problems that brought down the previous bridges, so we can save materials (the bridge now doesn't need to be so sturdy, because it avoids the strong tensions in a "smarter" way), and we can use these materials for backup (extra cables if the bridge falls by some mechanical failure.

OK so now we have a safe cable, but how do we use this to pass cars and trucks (what we want to do with a normal bridge) ?

If we will create a FIXED road on a few cables like this, then we are back to where we started with all the problems, and our bridge will collapse like they did.

So instead, think about how we use a Zip line

https://en.wikipedia.org/wiki/Zip_line

But instead of using the height difference between the two ends of the cable, and a passive pulley, we should use an active pulley that turns by the power of the car or truck that "rides" it.

So imagine like an aerial lift (cable car) with a big enough hanging gondola ("car") to carry a normal truck inside it

https://en.wikipedia.org/wiki/Aerial_lift

OK but instead of the cable moving, the cable in our case is stationary.

The movement comes from the gondola itself, or more precisely from the truck (or car) that is inside this gondola.

We need the engine of the truck to make the gondola move on the cable (the cable is not moving).

So in the floor of the gondola will be something an interface for the wheels of the vehicle, something like this:

Roller brake testers

https://en.wikipedia.org/wiki/Brake_tester#Roller_brake_testers

you can see in this picture here:

English: Roller brake tester chassis in an MOT garage

https://commons.wikimedia.org/wiki/File:Roller_brake_tester.JPG

thank you to AJH1975

But instead of being used for testing the truck's brakes, they will be used for moving the gondola by:

Roller chain

https://en.wikipedia.org/wiki/Roller_chain

(like the chain a motorcycle or bicycle)

which is a type of Chain drive

https://en.wikipedia.org/wiki/Chain_drive

that is passing over a Sprocket (like cog wheel)

https://en.wikipedia.org/wiki/Sprocket

imagine this like the continous track of of tank tread of caterpillar tread

https://en.wikipedia.org/wiki/Continuous_track

or a motorcycle chain

And this mechanism transmits the force from the truck wheels to the sprocket on the roof of the gondola that moves on the cable.

On top of the cable we need to lay this roller chain (chain drive).

The cog cannot roll on our smooth cable directly, it will slip and also damage the cable, so we need the chain placed on top of the cable, and the cog will grip the "holes" between the chain links.

Also like in any other zip-line the "sides" of this "pully" are bounded on both sides, so the pully doesn't slip sideways from the cable (the chain).

we also probably need gears to make the movement slow and strong (trade more speed for more torque).

https://en.wikipedia.org/wiki/Gear

Now that we have gondola hanging like a pendant hanging on a necklace, we are back to the problem of stabilizing it against the side wind.

So unlike a normal gondola, we connect to in two points, far from each other (one close to the front of the truck, and one close to the back of the truck) so it cannot turn from side to side.

Another precaution is that the gondola itself can be shaped like a cylinder (with the diameter like length of the truck, and the height like the height of the truck). And this extra roundness is built from something light and strong like aluminum mesh and on this we spread like a circus tent made from some strong and light fabric, like the nylon used to make parachutes.

https://en.wikipedia.org/wiki/Parachute

So the whole thing works like a personal Ferry

https://en.wikipedia.org/wiki/Ferry

that you (the truck driver) are powering yourself.

You arrive on one side of the “bridge”, drive into the gondola which rests on a passive fixed “fork” (like in a forklift but that never moves).

You close the gate of the gondola to be extra sure.

Then you get inside the cabin of the truck (where you drive normally)

https://en.wikipedia.org/wiki/Truck#Cab

and you drive forward slowly in first gear, all the way until you get to the other side of the “bridge” and onto another fixed “fork” where you open the gate in front of you and drive off the gondola and you keep on truckin’.

So this whole thing is a lot cheaper and a lot safer than a bridge.

The only problem I see is how to move from one tower of the bridge to the next one, in case it’s a long bridge over a lake for example.

But since we lay the chain (roller chain / chain drive) ABOVE our cable, we can make the towers have just a simple flat surface (between the pully of one cable and the pully of the next cable), and lay one very long continuous chain over ALL the bridge, and ALL the towers and ALL the cables.

With part of the enormous cost that we saved by not building a beefy bridge, we can also further secure the gondola from above and below with more cables just in case!

Chapter 15 – Rotating portal wormhole - Faster Than Light (FTL) communication

Six black holes in a rotating circle

It works like the whirlpool when emptying the bath which creates a column of air in the water

This way it creates a column of void within the normal space i.e. a place where a particle can travel faster than the speed of light

Make a rotating circle like this in the middle between two galaxies

If we imagine the circuit as a clock

So one galaxy is looking at the clock face

And a second galaxy looks at the back of that watch

The great clock stands fixed at the Lagrange point between the galaxies

Only the points of the hours ie the black holes that make it up, only they rotate like the hands

There are no hands in our clock, I simply explain the direction of rotation of the points of the hours

Now the middle clock also has a Lagrange point between it and our galaxy

So at this Lagrange point you put a smaller clock

And the same thing the middle clock has a Lagrange point between it and the neighboring galaxy

So also at that Lagrange point you put a smaller clock

The same size as the one closest to us

And you can continue this process by filling the spaces between the clocks with smaller and smaller clocks

And because they all rotate in the same direction, then we have a rotating tube

Since the pipe rotates around its longitudinal axis and as far as we are concerned the pipe is completely symmetrical

So we don't even see that the tube is rotating, for us it's just a tube

In the middle of the tube there is a permanent wormhole that you can pass through

We ourselves cannot pass through it, because of what I explained at the time about the fourth dimension when I explained about how turbulence works

But for example a neutron can pass through there without a problem,

if we shoot a neutron from one side of the tube to the other side of the tube it can move faster than the speed of light, because nothing disturbs it, there is no space and no time there.

What is in the middle along the tube is actually the fourth dimension.

This is analogous to the vortex in the water that exists when the water comes out of the bath, the vortex creates a cone in the middle where there is no water so if we throw a marble down then the marble will move much faster there through the air than it could move through the water

And then basically we have a very fast, maybe even instantaneous communication channel with our neighboring galaxy.

Chapter 16 – Pure electric motor

a cheap and very fast method for space travel!

Today's regular electric motors use only magnetism by a relativistic effect that is very weak compared to pure electrical power. In this method here we use pure electrical power.

How Special Relativity Makes Magnets Work

Veritasium

https://www.youtube.com/watch?v=1TKSfAkWWN0

The problem is that in order to achieve pure electric power you have to isolate the plus and minus particles so that there will be a separate proton (and then two such protons will repel each other). Or so that there will be a separate electron (and then two such electrons will repel each other).

But it is difficult to separate a proton from electron (i.e., it requires tremendous energy that makes the entire process not worthwhile, energy wise).

So the solution is not to separate a single one from a single one, but many of them from many of them, by using a phenomenon in which they are momentarily (for a very short time) separated ANYWAY. as we will explain.

Another problem is how to hold them after we isolated them. Ok let's say we have an electron in our hand or in a jar. It will simply bond with the protons in our hand or in the jar. He will bond (connect) with the atoms of the tool that holds it.

So the solution is not to hold them at all, but instead to use the right timing to achieve excess electrons and use them immediately. Like in this demonstration of artificial non-spiral waterspout,

Here is a cool video:

https://www.youtube.com/watch?v=iWKFPTgkpXo

90 ft. Vertical Spike Wave in Slow Mo

The Slow Mo Guys

If that cool video doesn't work then check out this other video of the same phenomenon:

please look at a minute (0:40)

Demonstration on Flowave

EdUniPhysicsAstro

https://www.youtube.com/watch?v=RHTcSKkUU8U

So, for example, metal in general is a block of protons (metallic lattice) with a SEA of electrons floating between them and all the electrons are moving freely. So you can move the electrons back and forth, making the amplitude bigger (like you do in a resonance, like resonant wave pool, no need for big energy investment, just the exact proper timing), of course the push in our case is by a weak electric current once on this side and once on the opposite side, which is simply a push of the electrons.

But if we are timing the “pushes” correctly then we are creating at the end of the "pool" (at the edge of the metal block) "Electrons" (an electrons momentary column (which exists only for a moment), like in the video the pool water vertical spike wave or non-spiral waterspout) that’s sticking out of the metal.

What is the difference between this and the experiment by Thales of Miletus from ancient Greece who rubbed amber (fossilized tree resin) against wool (or hair comb) and static electricity? In that experiment there is a whole lump with lots of protons and electrons, and with a very small advantage for electrons, for example, so for example when we pick up a piece of paper with the comb (right after we combed our hair), The two particles are not close to each other, and are trapped in a large mass, and cannot develop a large speed. It is very important that they will be "naked" and as close as possible to each other, because the force decreases according to the square of the distance.

So we shoot this "water spike" (that is, the excess electrons) with a laser. Laser is simply photons that are all in the same direction and amplitude, they have no electric charge, they are neutral. One photon can, for example, be swallowed up by the electron that will then spit it out, but many photons in the same direction simply push the electron.

We want to push it several centimeters away, to the place where it will (statistically) meet another electron that we are pushing at the same time from the opposite direction, using an identical metal block with the same process but pointed in the opposite direction. So what we have is a cheap version of “electron gun” (as there is old television CRT)

https://en.wikipedia.org/wiki/Electron_gun

But unlike a regular electron gun that requires a lot of energy and is expensive to operate: a heated negative electrode (expensive in terms of energy), a positive electrode for acceleration (again expensive in terms of energy); In my system we do not need much electricity because we use the exact timing:

just like when a fat man sits in a swing in a playground, and a little boy can push him without much energy, if the little boy pushes in the right moment each time.

https://en.wikipedia.org/wiki/Resonance#/media/File:Little_girl_on_swing.jpg

A girl on a garden swing.

Pushing a person in a swing is a common example of resonance. The loaded swing, a pendulum, has a natural frequency of oscillation, its resonant frequency, and resists being pushed at a faster or slower rate.

thank you to Luiz Carlos - No parque

https://en.wikipedia.org/wiki/Resonance#Examples

Regarding the laser, we use sunlight (or a passive telescope that is a starry center, which has plenty of space), transfer all this light through some mirrors and a rhuren (gemstone ruby gemstone) and we have a laser for free. Okay so what we have actually accelerates very small and cheap particles. Only instead of filming the particles that clash and fly sideways, we use their aviation to the sides as our push - some of the particles fly on the spacecraft and push it forward, at the expense of the particles that fly into the outer space. How is it better than a pigeon engine today? That pigeon engine uses a magnetic field to accelerate pigeons (which we said it is far from the efficiency of pure electric power, it is just a relative by -product of electric power); In addition, pigeon engine should create plasma that is a lot of energy; In addition, pigeon engine needs noble gas like Xenon - in my method any metal can work. Also, nothing strange happens when two electrons are conflicting, the result is two electrons. So there is no fear of all kinds of strange particles to destroy the spacecraft.

https://physics.stackexchange.com/questions/64628/what-happens-in-electron-electron-collisions

Regarding how to do that the two lasers will not destroy each other (and the spacecraft), they can be directed in the first place not directly towards each other but both diagonally out to the space (ie scrape the corner of the metallic block and from there continue straight into the outer space) or one can diagonally into a system of mirrors That you will eventually recycle them to the needs of the spacecraft and its people (say heat water, etc.).

Chapter 17 – Moon dust Van de Graaff fishnet

A solution to moon dust sticking to astronauts

Moon dust is a big problem for astronauts to the point of life-threatening (if it enters the lungs for example, or spoils critical equipment).

The reason the dust sticks to the astronauts is that it has a positive electrical charge.

https://www.inverse.com/science/nasa-moon-dust-problem

NASA is trying to solve this with positive electrical charge of alpha particles

https://www.wired.com/story/the-next-big-challenge-for-lunar-astronauts-moon-dust/

There they describe something like a vacuum cleaner but in reverse, which blows the particles away from it.

In my method, as in the joke "We don't pee on our hands", most of the dust doesn't stick in the first place, and what does stick is "collected" like a normal vacuum cleaner here on Earth (but by static electricity).

My method consists of three parts that all rely on a van de Graaff generator

https://en.wikipedia.org/wiki/Van_de_Graaff_generator

In a normal van der Graaf generator there is a manual handle that is turned by hand, then the large ball is charged with a positive charge, and the small ball is charged with a negative charge.

We don't need a high voltage to the point of sparking, but a low voltage that will allow electrostatic attraction

https://en.wikipedia.org/wiki/Triboelectric_effect

(Note the cute picture with the cat!)

Part One:

So with us the big ball is the entire astronaut himself that we want to charge his entire suit with a positive charge. How do you do that? By the fact that the astronaut's suit will be woven (while it is

being made) with metal threads, so that it is actually like a fine metallic mesh (like the mesh of a fishnet pantyhose) but of thin metal.

https://en.wikipedia.org/wiki/Fishnet

Like here you see a fabric that protects me from the police's electric taser

https://en.wikipedia.org/wiki/Conductive_textile

So the astronaut when he leaves the spacecraft charges himself positively, and then disconnects the device from him. Each of the balls is covered in an insulated plastic box, and the device hangs on the astronaut's belt in case he needs to recharge himself with a positive charge.

That way the dust doesn't stick to it almost at all.

Second part:

The little ball is used like a vacuum cleaner, by opening the top of the little ball's plastic box, so that the little ball can get close to the surfaces (but not touch them because then it will electrically disintegrate).

This way you can use the small ball to collect particles just like the ancient Greeks did with amber and wool (that's where the word electricity comes from in English).

third part: Inside the spaceship itself, assuming that the spaceship is standing on the moon and there is downward gravity, it is possible to make a curtain of metallic beads (just as there is a curtain instead of a door, made of wooden beads between rooms in old houses).

https://mrsdaffodildigresses.wordpress.com/2020/08/05/portieres-try-the-patience-1901/

The metallic beads will be charged with a negative charge, and when the astronaut comes from outside and maybe some dust still sticks to him, the beads will "suck" the dust to them when he enters through the "door". Then after the beads are electrically "discharged", the dust will fall on the floor and can be collected with a broom or a vacuum cleaner.

It is possible to make the rod of the curtain itself to be able to rotate around itself, and to deploy or fold the bead chains, if you don't need them all the time.

And the rotating mechanism will also be the handle of a van der Graaf generator, which will charge the beads with a negative electric charge.

Then with the positive charge you can finally discharge the curtain, that is, return it to an electrically neutral state.

Chapter 18 – Serum from bats against rabbies and ebola

We all know how an antivenom works, you take the venom of a snake and inject a very small amount of it to a big animal like a horse, so it doesn't kill the horse, and after a while the horse's body develops antibodies against the venom.

We know that some very brave (and half crazy) people also succeeded in doing this gradually with their own HUMAN body.

Can you become immune to Snake Venom?

https://skeptics.stackexchange.com/questions/40545/can-you-become-immune-to-snake-venom

Here is an article about Steve Ludwin

https://edition.cnn.com/2016/12/21/health/snake-venom-injection-research/index.html

who learned this from the master Bill Haast

http://www.billhaast.com/serpentarium/immunization_snakebites.html

You can see him in video (I almost got a heart attack when the king cobra almost bit Bill's knee) :

Very rare footage of Bill Haast with shocking cobra bite!

Wild2YouTV

https://www.youtube.com/watch?v=IoByplZraSY

(In Israel in my home town Haifa there was also a famous person who did such things (until he got murdered by one of his cult followers). His name was Yaakov Sela.)

OK so what do we learn from this, and especially from the fact that with BOTH of them their HUMAN blood was used for making antivenom to save normal people:

"Interestingly, Haast went world over to donate his antibody rich blood to snakebite victims as reported by the New York Times in 2011. Haast's immunity was built over 60 years by every day injecting himself with a cocktail of poison from venomous snakes of 32 species."

And

“But three years ago, researchers from the University of Copenhagen contacted Ludwin in hope of developing a new process to create anti-venoms to treat bite victims. Brian Lohse, an associate professor in chemical and molecular biology wants to change this procedure by replacing the animal blood with Ludwin’s.”

So what we learn from this is that if we get someone brave enough (and crazy enough) to pit his body’s immune system against the worst kinds of poison, and if that someone is lucky enough to survive, then his blood is even more effective as antivenom then using a horse.

Okay so keep this first fact in mind for a moment, and now let’s talk about bats.

Here is a paragraph from an article in ScienceNews:

Bats’ immune defenses may be why their viruses can be so deadly to people

https://www.sciencenews.org/article/bats-immune-system-viruses-ebola-marburg-people

So this is VERY interesting article, and it is based on a research published in eLife:

Accelerated viral dynamics in bat cell lines, with implications for zoonotic emergence

https://elifesciences.org/articles/48401

by these scientists:

Cara E Brook, Mike Boots, Kartik Chandran, Andrew P Dobson, Christian Drosten, Andrea L Graham, Bryan T Grenfell, Marcel A Müller, Melinda Ng, Lin-Fa Wang, Anieke van Leeuwen

So what they say is that in one kind of bat:

The experiments made use of cells from one bat species – the black flying fox – in which the interferon pathway is ALWAYS ON

(and they explain that normally in another animal this would cause inflammation, but bats have mechanisms for reducing inflammation)

So what if we use this mechanism of bats in a BLACK BOX fashion, without the need to understand exactly what and how it happens, just like people used a horse for snake bites, but instead with this specific type of bat, because this bat can survive: rabies, Ebola and the SARS coronavirus?

Today if someone contracts rabies and the disease started going through the person’s nerves, then this person is DEAD for sure (there are only 14 people who survived rabies in all of history EVER). So

if we ask for the person to consent to an experimental treatment with bats blood; The person has nothing to lose because otherwise he's dead for sure. Then we infect a bat from this kind of "always on" with the disease (in this case rabies). Then we take the components of blood from the bat (just like we do with the horse in the antivenom making) and inject them into the sick person.

According to Wikipedia there is another way to slow the rabies disease:

At least two treatment schemes have been proposed for treating rabies after the onset of symptoms, the Milwaukee Protocol and the Recife Protocol. The Milwaukee Protocol was first used in 2004 on Jeanna Giese, who became the first person known to have survived rabies without preventive treatments before symptom onset. The protocol puts a person into a chemically induced coma and uses antiviral medications to prevent fatal dysautonomia. The overall protocol is complex; the sixth version of the protocol last updated in 2018 consists of 17 pages with 22 steps of treatment, detailed monitoring, and a timeline of expected complications. The Recife Protocol follows the same principle but differs in details like termination of sedation and supplementary medication.

According to Wikipedia in Hebrew as far as we know up to the year 2009, there were 25 times that the Milwaukee Protocol has been tried (except the girl Jeanna Giese) and out of them only 2 patients survived. The Recife Protocol was tried on other 10 patients, out of them 2 survived.

So I think especially since these protocols include induced COMA, it's better to first try the bat blood components treatment, and by this we are helping the body of the patient to proceed half of the way to healing (with whatever the bat blood contains) and from that stage onwards, the human body can utilize whatever it is in the bat's blood that helps, in order to go all the way and cure the disease. Just like the human body uses the antibodies that the horse produced, to fight successfully against a snake venom. And maybe after this we can use the blood of that person that survived from rabies to cure another person and maybe we can in the future not use the bat's blood, but directly cure one patient with a blood donation from the previous patient that survived. (similar to the blood of Bill Haast and Steve Ludwin that was used against snake venom).

Chapter 19 – Anti Corruption Regime - a new form of government based on groups of 150 individuals

According to Yuval Noah Harari's book "Sapiens – A brief history of humankind", small groups can be managed without bureaucracy, based on familiarity between the people. In a group of 150 people or less, everybody knows everybody else, so if someone does something wrong, he is punished by the gossip of the group. We can see this for example in a Kibbutz, which was a very effective organization because it chose its own leadership and there was strong peer pressure if you did something that was anti-social by all your peers who knew you personally.

Here is a quote from this book in the chapter 'The Tree of Knowledge':

"In the wake of the Cognitive Revolution, gossip helped Homo sapiens to form larger and more stable bands. But even gossip has its limits. Sociological research

has shown that the maximum 'natural' size of a group bonded by gossip is about 150 individuals. Most people can neither intimately know, nor gossip effectively about, more than 150 human beings.

Even today, a critical threshold in human organizations falls somewhere around this magic number. Below this threshold, communities, businesses, social networks

and military units can maintain themselves based mainly on intimate acquaintance and rumor-mongering. There is no need for formal ranks, titles and law books to keep order.

A platoon of thirty soldiers or even a company of a hundred soldiers can function well on the basis of intimate relations, with a minimum of formal discipline. A well-respected sergeant can become 'king of the company and exercise authority even over commissioned officers.

A small family business can survive and flourish without a board of directors, a CEO or an accounting department.

But once the threshold of 150 individuals is crossed, things can no longer work that way. You cannot run a division with thousands of soldiers the same way you run a platoon.

Successful family businesses usually face a crisis when they grow larger and hire more personnel. If they cannot reinvent themselves, they go bust.

How did Homo sapiens manage to cross this critical threshold, eventually founding cities comprising tens of thousands of inhabitants and empires ruling hundreds of millions? The secret was probably the appearance of fiction.

Large numbers of strangers can cooperate successfully by believing in common myths…"

OK so here I'm stopping the quote from Yuval Noah Harari because here he is starting to describe how things are working today, the bad system (see Netanyahu for example)

What we will reach in this structure is that in every small group, the people will choose (direct democracy) which one of them is most fit to be the group leader, and the leader knows each one of them so he will be embarrassed (or even scared) of doing wrong things.

Here is a real story about Cirilo Robles who got what he deserved – death – he was a major of the town and he was lynched by an angry mob for his corruption:

https://www.latimes.com/archives/la-xpm-2004-may-20-fg-lynch20-story.html

So in my suggested model the leader will change his ways a long time before reaching such extreme measures, but the main point is that they CAN be reached, and the leader knows it. That's why he will not be corrupt and he will be loyal to the people.

OK. So how do we scale this (like the leader of the building) system into running the whole country?

For simplicity of the explanation let's talk about the head of the "building 1" (a typical building in some city), Mr BuildingMananger1.

So his family Mrs BuildingManager1 and their kids are living in building 1. So the neighbors become their friends and acquaintances. Their kids play with the neighbors' kids etc.

This is happening half of the time.

For the other half of the time, they are moving to their second home which you can think of as a "hotel" for all the building managers of that street (and all the managers' families).

it's in Mr BuildingManager1 's job description, it's obligatory, it's crucial for the system, it includes the couple and their children, and the cost is financed by taxes from the neighbors in their first home building 1.

OK. What does this arrangement of them living half of their time here and half of their time there gives us?

They are now also friends and acquaintances with the other managers of the buildings in that area. So half of their time they are participating in a higher group of the same size, this higher group is made of Mr BuildingManager1 and his family, and BuildingManager2 and his family and BuildingManager3 and his family and so on.

They choose democratically their leader who is one of them. NOT some government of the country choosing, again we are not re-creating a dictatorship.

So let's call this person that they elected Mr. StreetManager1 to be their leader.

So now Mr. StreetManager1 and all his peers from that neighborhood, do the same on a higher level. Half of their time they will live in a hotel in the center of that neighborhood that is dedicated for the managers of the streets, and half of the time in their normal home.

So in that building for half the time live Mr. StreetManager1 and his family, and Mr. StreetManager2 and his family and Mr. StreetManager3 and his family and so on.

All the street managers elect their leader who is someone from their own (not from a central government of the country) and let's call him Mr. Neighborhood manager1.

So I'm sure you understand the process by now:

The managers of the neighborhoods live (with their families) half of the time together in a central "hotel" in the city on choose the city manager.

And once more

The managers of all the cities in the county live (with their families) half of the time together in a central "hotel" in the county and choose the county manager.

And once more

The managers of all the counties in the country live (with their families) half of the time together in a central "hotel" in the center of the country and choose the country manager.

OK so now we got a new kind of prime minister or president or whatever you want to call him, but half of the time he lives with a very diversified group who are controlled by honest people.

What's more, we don't need bullshit to control the people fairly, like what Yuval Noah Harari calls "myths". If instead of loyalty to the "flag" and the "hymn", the people are loyal to their friends and neighbors that they see half of the time, this is much more powerful and efficient.

Today we have videotelephony / videoconferencing (like Zoom and Skype etc). So if the people in a group need to call their leader who is away they can talk to him and ask for his directions this way from afar.

But in terms of shame from doing corruption, there is no replacement for living among your peer group and being directly judged and effected by them.

Our magic number of 150 will be the total maximum number of people that a person can know and gossip about, so we need that each group will be maximum HALF of that so the groups will be maximum of 75 people. Because Mr. BuildingManager1 knows 75 people in his building, and add to that he knows 75 people in the "hotel" of the building managers in street 1, so together this is our limit of 150 people.

Using this system the simple person on the street cannot elect the manager of the country, but instead the manager of the country is elected by an elite of an elite which are the most qualified people.

Today the ignorant mob on the street is incited through Cambridge Analytica algorithm (like Nation Builder) to vote for things that are against their own good, like electing the psychopaths Netanyahu in Israel and Trump in the USA.

OK, so how can we prevent a situation that psychopaths will not “rise through the ranks”, like some gangster will force the people of his building to vote for him, and the force the managers of the buildings of that street to vote for him, and then the neighborhood and so on?

Because we still have police which is in the level of the country and controlled by the head of the country. If the gangster do something illegal like injuring or threatening or extorting people, he is stopped by the police.

It’s a lot better system because it takes time for the criminal to rise through many ranks:

Building manager, street manager, neighborhood manager, city manager, county manager, country manager.

In each level his peers are in close contact with him and can give evidence about his crimes to the police.

As opposed to today that somebody like Trump or Netanyahu can come without any experience, and lead a country (to its destruction).

My system is using in the problem presented by Cyril Northcote Parkinson

https://en.wikipedia.org/wiki/C._Northcote_Parkinson

in his wonderful book called Parkinson's Law: The Pursuit of Progress (London, John Murray, 1958).

Which presented the amazing insight called: Law of triviality.

(it’s also called bicycle-shed effect or bike-shedding)

https://en.wikipedia.org/wiki/Law_of_triviality

in his book in the chapter about High Finance or the Point of Vanishing Interest.

Here I am turning the problem on its head so it becomes a solution.

I am aware of the fact that for most people the decision about a nuclear reactor (which they know nothing about) will be decided in two minutes, and the decision about coffee (which they know a lot about) will be decided in two hours,

So I’m saying let the simple people in the building judge by the simple criteria that they do know about: is the building clean and safe? is money given to the Homeowner association (condo association / house/resident's committee) being stolen without them supplying service in return?

So by judging in exactly the simple things they are capable (and want) to discuss, the proletariat simple people are choosing in ideal way the smart elite that will rule them.

Also we are bypassing the problem of being promoted above your capabilities,

https://en.wikipedia.org/wiki/Peter_principle

because if that happens, that person is not “gone” forever, he can simply feel this himself (or from his peers in the upper floor) and return to his previous level, by not being elected the next time.

So in my system we enable the smarter elite reach the top and judge things that are out of reach for the simple people like the economy and so on. Complicated questions about the economy, like how Netanyahu embezzled from the people of Israel all the money in the “Natural gas in Israel outline (plan)” which people in the knowhow call “the great gas heist” where Netanyahu stole one trillion (1 with 12 zeroes after it) 1,000,000,000,000 new Israeli shekels from the public. 250 billion dollars (a billion is 1 with 9 zeroes after it). 250,000,000,000 in U.S. dollars.

So obviously these numbers don’t mean anything to a person on the street, so he doesn’t get mad when they are stolen from him, but hopefully the smarter elite that will be chosen in my system will know how to judge correctly crimes like this for example (not to mention approving the nuclear submarines to Egypt and the advanced stealth fighter jets to Arabia).

Chapter 20 – Artificial Gravity and Ludicrous Speed solution based on the magnetic levitation of a live frog and 3d printed analogue computers

Remember in the movie Spaceballs when they suddenly accelerated to ludicrous speed and then suddenly stopped, and the evil Dark Helmet almost got killed?

OK so this is funny in a movie, but what can we do against it in a real life spaceship?

https://www.scientificamerican.com/article/star-wars-science-light-speed/

The Jump to Light Speed Is a Real Killer

Excerpt from the book The Science of Star Wars by Jeanne Cavelos

So here we use the same technology that the scientists used to levitate a frog: diamagnetic levitation.

https://en.wikipedia.org/wiki/Ig_Nobel_Prize

The 2000 Ig Nobel Prize in physics was awarded to Andre Geim, Radboud University Nijmegen, and Michael Berry, University of Bristol, UK, for the magnetic levitation of a live frog. Geim was awarded an actual Nobel Prize in Physics in 2010 (for Graphene).

You can watch the frog in this video:

NETHERLANDS: BRITISH & DUTCH SCIENTISTS MAKE FROG FLOAT IN MID-AIR

AP Archive

https://www.youtube.com/watch?v=KlJsVqc0ywM

The bad part is that floating a person even against Earth's gravitation, meaning 1 G , we need the strongest magnet made today, that can make a magnetic field of 45 Tesla.

https://en.wikipedia.org/wiki/Bitter_electromagnet#Record_Bitter_magnets

OK, so a Bitter magnet is made from a tower of discs of copper, which are build with built in holes to let cooling water run through them, and they contain insulators in a spiral pattern so that the

current runs in a spiral. And the part that the magnetic field is strongest (use the force Luke! 😊) is inside this tube.

OK so a 35 Tesla magnet weights 2000 pounds which is like 1 metric ton.

I'm guessing we need something about 10 times as strong, so the ship has to contain 10 tons of magnet.

The whole thing matches my invention about

Lenz Law Navigational Deflector

protecting spaceship from space rocks with a force field using Lenz's Law.

where i suggested that the whole spaceship will be a long tube made of copper.

which is exactly like the kind of tower of discs of copper that a Bitter magnet is!

According to the above article in Scientific American it will take 2 weeks to get to half of the speed of light, if you increase your speed all the time by the acceleration that would normally kill a person in a few seconds which is 9 G. (nine times the gravity of the Earth).

So obviously we don't have such a power supply, but what we CAN do, is instead of one big jump to our final speed, we can gradually do this is many small jumps.

This way our magnet have time to cool back down after each jump.

The magnet needs to work only during the acceleration to the new (a little faster) speed; after we reached this new speed the magnet is turned off and cools down and it's taking a rest.

OK so what do we do so as not to fry all the electronic equipment on the spaceship during the activation of such powerful magnetic field which is like an EMP?

This can be solved before each jump, by copying the necessary calculations to an analog computer (a physical representation of the problem we need to solve during the jump, such as navigational question, or when to stop accelerating and the most important question of all: when EXACTLY to turn on and when EXACTLY to turn off the magnet so we don't die from the jump and so we don't die from the magnet. They must happen in the same instant!) to a non-metallic material computer, which doesn't work on electricity, or in other words a mechanical analog computer.

https://en.wikipedia.org/wiki/Analog_computer#Mechanical_analog_computers

I think we can make this using a 3d printer before each jump so that it is tailor made to the specific calculation problem that we need to solve at that specific jump. Then we turn off our normal computers and wrap them in Faraday cage against the EMP.

https://en.wikipedia.org/wiki/Faraday_cage

This can be designed in an elegant way like the fallboard of a piano

The Mystery of the Piano Fallboard... Will it ever be solved?

LivingPianosVideos

https://www.youtube.com/watch?v=n6Tmtpd7Rts

when you need the ship's computer (after a jump) you raise the fallboard, the computer turns on and you work normally. But when you are preparing for a speed jump (acceleration) you close and secure this metallic fallboard and it shuts down and covers and protects your normal computer.

If you think it doesn't make sense to trust your life in the hands of a mechanical computer see for example how the U.S. navy used until now so long ago 1980's electro-mechanical analog computers for the battleship's big guns:

Gears of war: When mechanical analog computers ruled the waves

From the archives: In some ways, new Navy computers fall short of the power of 1930s tech.

by Sean Gallagher from 2020

https://arstechnica.com/information-technology/2020/05/gears-of-war-when-mechanical-analog-computers-ruled-the-waves/

So we need something similar but instead of metal (which is affected from the EMP) we need this to be from plastic, and instead of the physical power of electricity we need another mechanism. I don't think that we can make good springs (like used in a clock mechanism) from plastic,

But maybe we can use pneumatic force (before the space jump we pump compressed air into a can and then release it in steady (or at least known in advance) flow rate. So this can control mechanism without the electricity:

How does a hydraulic directional control valves work?

Hydraulic and pneumatic systems

https://www.youtube.com/watch?v=vGXjZNmK8ps

and since we can also create logic gates with hydraulic fluid

https://hal.science/hal-02408701/file/AJP_water_computer.pdf

Hydraulic logic gates: building a digital water computer

Nicolas Taberlet, Quentin Marsal, Jérémy Ferrand, Nicolas Plihon

thank you to HAL open science

maybe we can also make some of the functions of a digital computer but without electricity.

I'm thinking about reconstructing the functions (like differential equation functions) that we need by 3D surfaces of plastic, but if we need something more traditional we can build an analog computer like they do from LEGO here

https://hackaday.com/2022/02/01/analog-computer-made-from-lego-predicts-tides/

https://www.youtube.com/watch?v=PYRPTm_y1eM

Predicting the tides with an analog computer made from Lego

Pepijn de Vos

(except we run it with compressed air instead of electricity)

Chapter 21 – Big Prime Numbers finding/factoring

A mechanical method for finding/factoring big prime numbers inspired by the date plantation.

When you drive on the road to Eilat and pass by a date plantation (many date palms planted in rows and columns), then there are angles where the trees line up at the same angle, and they are less likely to block the desert that is seen behind them (bright color). That is, if we had a light sensor then we would receive more light when we are right in front of the plantation for example, and when we are at a 45 degree angle to the plantation, and other angles where many trees hide each other (congruent/overlap). What does it mean hide each other? these are multiples of the same number. The bigger the number, then it's as if we drove farther from the middle of the plantation to the side, that is, we continued on the road.

You can see it beautifully in the iPad app Incredible Numbers by Professor Ian Stewart

https://www.pcmag.com/reviews/incredible-numbers-by-professor-ian-stewart-for-ipad

in the part of prime numbers There is a part of “find the pattern in prime numbers”, So there are all the numbers let's say in their example in each row there are 30 numbers.

First row 1 to 29

Second row 30 to 59

and so on.

Then when you choose "all numbers divisible by 2" then every second column is deleted.

And when you select "all numbers that are divisible by 3" then every third column is also deleted. And when you choose "all numbers that are divisible by 7" then there are some diagonals that are deleted.

So we basically have to erase all the columns and diagonals and find out what's left.

We can do this physically in two options:

Option 1:

We can make the same with a lattice of atoms, and flow between them particles that are not affected by the electric and magnetic attraction, let's say photons, that is, light.

And then know statistically how many photons passed through the cubic lattice (for example, table salt is a cubic lattice).

So you take a row of light-emitting optical fibers on one side of the salt cube, and a row of light-receiving optical fibers on the other side of the salt cube, you can see where statistically there is the most light, and this means that there might be a number there for which it’s rare (or non-existent) that other numbers are found with him in the same diagonal, in other words if we see light, then it means that we found a number who is alone in his diagonal! then he has a high potential to be a prime number.

When we exhaust all the numbers that can be checked (the number of atoms on the side of the cube) We can place one cube behind another cube, hold the first cube at a small angle, then check all the angles of the second cube relative to it, then advance the first cube to the next small angle, then check all the angles of the second cube relative to it, etc. Like the idea of a dial clock, that the hour hand moves a little, then the minute hand makes a full turn, then the hour hand moves a little more, then the minute hand makes a full turn, etc.

Of course we are not limited to two cubes, we can put more cubes one behind the other, and thus check the factorization of large numbers, which today is a big problem to calculate on a digital computer, but it is actually an analog computer that helps solve the same problem quickly.

Option 2:

work with a cube as flat as possible. As if we spread out of the big cube a slice which is a square. We fire a laser into the crystal each time at a different angle, where there are many on the same diagonal the first ones protect the next ones in line from the laser.

So the outermost atom will heat up and then we know it's not a prime number.

If we see from the side (as if we are above the date palm grove, or as if we are in the app where we see the table from above) that there is one number that gets very hot and is close to the middle of the cube, then we know that it is a prime number because nothing protects it.

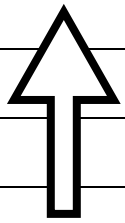
You can photograph it from the side and use the same software that detects supernovae in space by automatically comparing images.

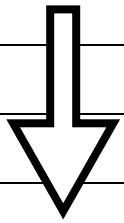
Epilogue

So now what?

Lately I pondered my future occupation, and narrowed it down to these four alternatives:

	Chances to impress the public	Chances to impress myself
Translating Information Security courses for teenagers	100%	0%
simplifying my inventions through comics outreach	66%	33%
Creating Hard Sci-Fi & science-y works	33%	66%
Learning by teaching unsolved problems lists from Wikipedia	0%	100%





The more something attracts the public the less it attracts me, and vice versa. So I'll bet on myself, and devote one half of my time to "Haproyekt" (math & physics mornings & afternoons); a third of my time to "Strulovitz/joker" (science popularization evenings); and a sixth to art (drawing at nights).

תעסוקה ופיננסים

שנת סיכון

קרן: לא כשירים

יוקרה: בעיני הציבור

לא כולם לעבוד

סיכוי למצוא עבודה

סיכוי להגשים 100%

סיכוי להיכשל 0%

אמנות ← המלצות

קשה להגיע לרמה טובה

חשיבות לעבודה

משיגת מומחים גלגה

סיכוי לכישלון 66%

סיכוי להצליח 33%

שינוי - כישלון לפיתוח

כולם לעבוד

הפרויקט - מתמטיקה

יוקרה בעיני הציבור

קרן: לא כשירים

סיכוי להגשים 0%

סיכוי להיכשל 100%

תלוי מומחים + קרן 3 שנים

שלוש מומחים - ערב

סיכוי להגשים 33%

סיכוי להיכשל 66%